c19Protocols

Reducing Risk of COVID-19 Infection and Severity

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TREATMENT PROTOCOLS

Early Treatment Protocols

By c19prot June 15, 2021

1. **Early Ambulatory Multidrug Therapy**, McCullough et al: https://rcm.imrpress.com/article/2020/2153-8174/RCM2020264.shtml (related interview and webinar)
2. **The I-MASK+** Early Outpatient Treatment Protocol for COVID-19: https://covid19criticalcare.com/i-mask-prophylaxis-treatment-protocol/i-mask-protocol-translations/
3. **Zelenko** Early Treatment Protocol: https://vladimirzelenkomd.com/zelenko-treatment-protocol/
4. **I-MASS** Prevention & At Home Treatment Mass Distribution Protocol for COVID-19 – https://covid19criticalcare.com/wp-content/uploads/2021/06/FLCCC-I-MASS-Protocol.pdf
5. **The Fleming Directed CoVid-19** Treatment Protocol (FMTVDM): http://c19protocols.com/wp-content/uploads/2021/01/fleming-protocol.pdf
6. **ICON Protocol** – (Ivermectin in COvid Nineteen): https://bit.ly/35whlcK
7. **MATH+ Hospital Treatment** Protocol https://covid19criticalcare.com/wp-content/uploads/2020/07/FLCCC_Alliance-MATHplus_Protocol_v6-2020-11-12-ENGLISH.pdf
8. **Budesonide (Pulmicort) dosing for outpatient COVID** per the Oxford RCT: http://c19protocols.com/wp-content/uploads/2021/03/COVID_Budesonide_Oxford-Based_Dosing_Guidance.pdf
9. **Budesonide-focused** Treatment Protocol: https://secureservercdn.net/45.40.145.151/umz.e26.myftpupload.com/wp-content/uploads/2020/11/Full-Protocol_withOTC.pdf from https://budesonideworks.com/
10. Prophylaxis and Treatment for **COVID-19 in Nursing Homes** https://covexit.com/prophylaxis-and-treatment-for-covid-19-in-nursing-homes-video-highlights/
11. The following is the protocol **Drs. Fareed and Tyson** have jointly developed as most effective for their COVID-19 patients:

https://www.thedesertreview.com/news/dr-george-fareed-and-dr-brian-tyson-share-hcq-protocol/article_7728815e-3ca2-11eb-8a08-7b4b0156c181.html

12. Government of India Ministry of Health & Family Welfare Revised guidelines for Home Isolation of mild /asymptomatic COVID-19 cases: https://www.mohfw.gov.in/pdf/RevisedguidelinesforHomeIsolationofmildasymptomaticCOVID19cases.pdf
13. COVID-19:THERAPEUTIC PLAN AND POTENTIAL THERAPIES. Aguirre-Chang, Gustavo; Trujillo F,Aurora; Córdova M, José Aníbal. February 2021 – https://www.researchgate.net/publication/348268812_TABLE_2021_COVID-19_THERAPEUTIC_PLAN_AND_POTENTIAL_THERAPIES_January_2021

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PREVENTION PROTOCOLS

Prevention Protocols

By c19prot June 14, 2021

1. **The I-MASK**+ Prophylaxis Protocol for COVID-19: https://covid19criticalcare.com/i-mask-prophylaxis-treatment-protocol/i-mask-protocol-translations/
2. **Zelenko** Prophylaxis Protocol: https://vladimirzelenkomd.com/zelenko-prophylaxis-protocol/
3. **Indian Council of Medical Research** (ICMR) – https://www.mohfw.gov.in/pdf/AdvisoryontheuseofHydroxychloroquinasprophylaxisforSARSCoV2infection.pdf
4. Prophylaxis and Treatment for **COVID-19 in Nursing Homes** https://covexit.com/prophylaxis-and-treatment-for-covid-19-in-nursing-homes-video-highlights/
5. **I-MASS** Prevention & At Home Treatment Mass Distribution Protocol for COVID-19 – https://covid19criticalcare.com/wp-

content/uploads/2021/06/FLCCC-I-MASS-Protocol.pdf

6. **Vaccine Side-effects** Protocol: http://c19protocols.com/wp-content/uploads/2021/05/COVID-Vaccination-Side-Effect-Reducing-OTC-Medicines-and-Nutraceuticals.pdf

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By c19prot June 13, 2021 No Comments

- FLCCC I-RECOVER Protocol – https://covid19criticalcare.com/wp-content/uploads/2021/06/FLCCC-Alliance-I-RECOVER-Management-Protocol-for-Long-Haul-COVID-19-Syndrome.pdf
- Post-Acute Or Prolonged Covid-19: Treatment With Ivermectin For Patients With Persistent, Or Post-Acute Symptoms – https://www.researchgate.net/publication/344318845_POST-ACUTE_OR_PROLONGED_COVID-19_IVERMECTIN_TREATMENT_FOR_PATIENTS_WITH_PERSISTENT_SYMPTOMS_OR_POST-ACUTE
- Top Yale Doctor/Researcher: ‘Ivermectin works,’ including for long-haul COVID – https://trialsitenews.com/top-yale-doctor-researcher-ivermectin-works-including-for-long-haul-covid/

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Physicians/Facilities Offering Early Treatment

By c19prot June 12, 2021 No Comments

Telemedicine: https://www.americasfrontlinedoctors.org/covid-19/how-do-i-get-covid-19-medication

Telemedicine (i-Mask protocol): https://text2md.com/i-mask-protocol/

Telemedicine: https://speakwithanmd.com/corsination

Telemedicine: FrontlineMDs.com

Telemedicine: https://myfreedoctor.com/

FLCCC List of Additional Telemedicine/In-Person Options (i-Mask protocol): https://covid19criticalcare.com/ivermectin-in-covid-19/how-to-get-ivermectin/

List of Independent Practices: https://aapsonline.org/covidearlytreatment

List #2 Independent Practices: https://www.doctorsdontfearcovid.com/

List #3 of Independent Practices (includes non-US options and additional regional telemedicine options): https://www.exstnc.com/

Arnot Health & Lake Erie College of Medicine (upstate NY): https://www.arnothealth.org/

Bethany Medical (North Carolina): https://bethanymedicalcenter.com/

Budesonide Protocol Practices: https://budesonideworks.com/providers/

For those who have found a doctor that has prescribed HCQ but their pharmacy will not fulfill the early treatment prescription a potential resource may be Ravkoo Pharmacy. Phone: 863-875-5700 https://www.myravkoo.com/public/pharmacy

For a prescription drug pricing comparison, please consider checking GoodRx: https://www.goodrx.com/

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Studies

By c19prot June 11, 2021

https://c19study.com

https://hcqmeta.com/

https://bit.ly/hcqearly

https://c19ivermectin.com/

One page summary of ivermectin trials https://covid19criticalcare.com/wp-content/uploads/2020/12/One-Page-Summary-of-the-Clinical-Trials-Evidence-for-Ivermectin-in-COVID-19.pdf

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TREATMENT PROTOCOLS

Early Treatment Protocols

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Review

Multifaceted highly targeted sequential multidrug treatment of early ambulatory high-risk SARS-CoV-2 infection (COVID-19)

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The SARS-CoV-2 virus spreading across the world has led to surges of COVID-19 illness, hospitalizations, and death. The complex and multifaceted pathophysiology of life-threatening COVID-19 illness including viral mediated organ damage, cytokine storm, and thrombosis warrants early interventions to address all components of the devastating illness. In countries where therapeutic nihilism is prevalent, patients endure escalating symptoms and without early treatment can succumb to delayed in-hospital care and death. Prompt early initiation of sequenced multidrug therapy (SMDT) is a widely and currently available solution to stem the tide of hospitalizations and death. A multipronged therapeutic approach includes 1) adjuvant nutraceuticals, 2) combination intracellular anti-infective therapy, 3) inhaled/oral corticosteroids, 4) antiplatelet agents/anticoagulants, 5) supportive care including supplemental oxygen, monitoring, and telemedicine. Randomized trials of individual, novel oral therapies have not delivered tools for physicians to combat the pandemic in practice. No single therapeutic option thus far has been entirely effective and therefore a combination is required at this time. An urgent immediate pivot from single drug to SMDT regimens should be employed as a critical strategy to deal with the large numbers of acute COVID-19 patients with the aim of reducing the intensity and duration of symptoms and avoiding hospitalization and death.

Keywords

SARS-CoV-2; COVID-19; hospitalization; mortality; ambulatory treatment; anti-infective; anti-inflammatory; antiviral; corticosteroid; antiplatelet agent; anticoagulant; sequenced multidrug therapy

The pandemic of SARS-CoV-2 (COVID-19) is advancing unabated across the world with each country and region developing distinct epidemiologic patterns in terms of frequency, hospitalization, and death. There are four pillars to an effective pandemic response: 1) contagion control, 2) early treatment, 3) hospitalization, and 4) vaccination to assist with herd immunity (Fig. 1). Additionally, when feasible, prophylaxis could be viewed as an additional pillar since it works to reduce the spread as well as incidence of acute illness. Many countries have operationalized all four pillars including the second pillar of early home-based treatment with distributed medication kits of generic medications and supplements as shown in Table 1. In the US, Canada, United Kingdom, Western European Union, Australia, and some South American Countries there has been three major areas of focus for pandemic response: 1) containment of the spread of infection (masking, social distancing, etc., 2) late hospitalization and delayed treatments (remdesivir, convalescent plasma, antiviral antibodies), and 3) vaccine development (Bhimraj et al., 2020; COVID-19 Treatment Guidelines, 2020). Thus the missing pillar of pandemic response is early home-based treatment (as seen in Fig. 1).

The current three-pronged approach has missed the predominant opportunity to reduce hospitalization and death given the practice of directing patients to self-isolation at home. Early sequential multidrug therapy (SMDT) is the only currently available method by which hospitalizations and possibly death could be reduced in the short term (McCullough et al., 2020a). Most COVID-19 patients with progressive symptoms who arrive to hospital by emergency medical services do not require intubation or pressors initially in the field (Yang et al., 2020). Once hospitalized, if oxygen is required the mortality rate rises to ~12% (Palazzuoli et al., 2020). Approximately one quarter require mechanical ventil ation, advanced circulatory support, or renal replacement therapy and in that group the mortality exceeds 25% (S. Gupta et al., 2020a,b). Our observations suggest a majority of hospitalizations could be avoided with a first treat-at-home strategy with appropriate telemedicine monitoring and access to oxygen and therapeutics. Patients will have the best chance of therapeutic gain when trea ted before there is significant progression of disease (Argenziano et al., 2020; McCullough et al., 2020b; Rhodes et al., 2017).

The majority serious viral infections require early treatment with multiple agents and this approach has not been applied in trials of COVID-19 sponsored by governments or industry. Since COVID-19 syndrome is characterized by early exponential viral proliferation, cytokine-mediated organ damage and dysfunction, and endothelial injury with proximal platelet aggregation with thrombosis, (Fig. 2) it is not realistic to assume a single drug or antibody could comprehensively handle all of these manifestations. At this time there are no reports of conclusive randomized trials of oral ambulatory therapy for COVID-19 and none are expected in the short term. Most oral therapy trials reported to date have been small, underpowered, unblinded, relied on biased physician assigned endpoints, or in some cases, have been administratively stopped early without scientific justification or safety concerns.

Because COVID-19 is highly communicable, many U.S. ambulatory clinics do not care for patients with COVID-19 and studies suggest there has been little or no attempt to provide outpatient therapy to patients in the period before hospitalization (Price-Haywood et al., 2020). As the most notable early closure of a critically needed trial was U.S. National Institutes of Health study of hydroxychloroquine (HCQ) and azithromycin in ambulatory COVID-19 patients after 30 days with only 20 of 2000 budgeted patients enrolled (National Institutes of Health, 2020a,b). There has been no substantive federal effort since then on ambulatory trials and thus any future results are not expected in a time frame to influence public health policy (World Health Organisation, 2020). At the time of this writing, there are no planned trials of SMDT regimens designed to manage early viral replication, cytokine storm, and thrombosis in ambulatory patients with COVID-19 (Fig. 3). Hence, there is an urgent need for innovative early SMDT in COVID-19 to achieve the goal of reducing the intensity and severity of symptoms and lessening the risk of hospitalization or death. This outpatient ambulatory push could have a dramatic impact on reducing the strain on healthcare systems.

In the absence of evidence from or a commitment to clinical trials of early therapy, other scientific information on the pathophysiology, treated natural history, and clinical judgement together must guide contemporary ambulatory management of COVID-19 (McCullough et al., 2020b). Observational studies reporting outcomes in patient populations managed consistently with empirically derived early intervention regimens currently provide an acceptable level of evidence for safety and efficacy of these widely available, inexpensive and safe alternatives to the current standard of non-intervention (Khan et al., 2020). Based on pathophysiology and observational data, each physician and patient using shared decision making set the course for COVID-19 management: watch-

Table 1. Listing of early home-based treatment kits provided for acute COVID-19 illness by various countries.

Country	Drugs and supplements	References
Algeria	Chloroquine/Hydroxychloroquine	(Belayneh, 2020)
Argentina	Ivermectin	(Mega, 2020)
Brazil	Hydroxychloroquine, Ivermectin, Azithromycin (Vitamin D and zinc only for those who can afford)	(Coronavirus a Tarde, 2020; Ministério da Saúde, 2020)
Bangladesh	Ivermectin, Doxycycline	(Trial Site News, 2020)
Cameroon	Chloroquine/Hydroxychloroquine	(Belayneh, 2020; Bösmüller et al., 2020)
China	Chloroquine/Hydroxychloroquine plus other traditional medicine up to 23 different Chinese herbal medicines	(Fan et al., 2020)
Colombia	Ivermectin	(Mega, 2020)
Egypt	Chloroquine/Hydroxychloroquine	(Mohhamad, 2020)
France	Hydroxychloroquine, Azithromycin, and Lopinavir-Ritonavir	(Gérard et al., 2020)
Ghana	Chloroquine/Hydroxychloroquine	(Isaac, 2020)
India	Hydroxychlorquine, Ivermectin, alone or in combination with other drugs	(Vora et al., 2020)
Korea	Hydroxychloroquine	(Hong et al., 2020)
Mexico	Ivermectin, hydroxychloroquine	(Pacheco, 2020)
Morocco	Chloroquine/Hydroxychloroquine	(Brian, 2020; McFadyen et al., 2020; Mussa, 2020)
Mozanbique	Chloroquine/Hydroxychloroquine	(Belayneh, 2020; McFadyen et al., 2020)
Nigeria	Chloroquine/Hydroxychloroquine	(Felix, 2020; McFadyen et al., 2020)
Peru	Ivermectin, Azithromycin	(Diario oficial del bicentenario, 2020; Trial Site News, 2020)
Senegal	Chloroquine/Hydroxychloroquine	(Huaxia, 2020; McFadyen et al., 2020)
South Africa	Chloroquine/Hydroxychloroquine	(Katharine , 2020; McFadyen et al., 2020)
Spain	Patients who are already taking hydroxychloroquine within or outside of clinical trials for COVID-19 as well as patients undergoing chronic treatment with these drugs should continue taking them and, in any case, maintain their usual follow-ups with their doctors	(Agencia Española de Medicamentos y Productos Sanitarios, 2020)
Taiwan	Hydroxychloroquine	(Sheng, 2020)
Uganda	Chloroquine/Hydroxychloroquine, Azithromycin	(McFadyen et al., 2020; The Independent, 2020)
USA	No kits provided from public health agencies, Association of American Physicians and Surgeons Home COVID-19 Treatment Guide recommendends adjuvant neutraceuticals, and sequenced multidrug therapy by prescription	(AAPS, 2020)

ful waiting in self-quarantine or empiric treatment with the aim of lessening the intensity and duration of symptoms and reducing the risk of hospitalization and death (Gopalakrishnan et al., 2020). Fortunately, most healthy individuals with COVID-19 under age 50 years have a self-limited illness and no specific treatment is advised in the absence of severe symptoms. However, they should be advised that development of lower respiratory symptoms warrant evaluation of oxygenation status and consideration chest imaging which may prompt interventions with documentation of hypoxemia or pulmonary infiltrates.

However, those over age 50 and or those with one or more comorbidity have increased risks for hospitalization and death over 1% which increase substantially up to 40% with advancing age and more medical illnesses (obesity, diabetes mellitus, heart disease, pulmonary disorders, renal disease, and malignancies) and thus, warrant early ambulatory treatment according to best medical judgement weighing the benefits and risks of oral therapy. SARS-CoV-2 as with many viral infections, may be amenable to multiple drugs early in its course but is less responsive to the same treatments when administration is delayed and given in the hospital (Vaduganathan et al., 2020). Innovative SMDT regimens for COVID-19 utilize principles learned from hospitalized patients as well as data from treated ambulatory patients.

For the ambulatory patient with recognized signs and symptoms of COVID-19 on the first day (Fig. 2), often with nasal real-time reverse transcription or oral antigen testing not yet performed, the following three therapeutic principles apply (Centers for Disease Control and Prevention, 2020) : 1) combination anti-infective therapy to attenuate viral replication, 2) corticosteroids to modulate cytokine storm, and 4) antiplatelet agent/antithrombotic therapy to prevent and manage micro- or overt vascular thrombosis. For patients with cardinal features of the syndrome (fever, viral malaise, nasal congestion, loss of taste and smell, dry cough, etc) with pending or suspected false negative testing, therapy is the same as those with confirmed COVID-19.

1. Reducing viral spread and contamination

A major goal of self-quarantine is control of contagion (Nussbaumer-Streit et al., 2020). While there has been a great emphasis on masking and social distancing in congregate settings, many sources of information suggest the main place of viral transmission occurs in the home (respiratory, contact, oral-fecal) (Jef-

Fig. 1. The four pillars of pandemic response to COVID-19. The four pillars of pandemic response to COVID-19 are: 1) contagion control or efforts to reduce spread of SARS-CoV-2, 2) early ambulatory or home treatment of COVID-19 syndrome to reduce hospitalization and death, 3) hospitalization as a safety net to prevent death in cases that require respiratory support or other invasive therapies, 4) natural and vaccination mediated immunity that converge to provide herd immunity and ultimate cessation of the viral pandemic.

ferson et al., 2020; Xu et al., 2020). Masks for all unaffected contacts within the home as well as frequent use of hand sanitizer and hand washing is mandatory in the setting when one or more family members falls ill. Sterilizing surfaces such as countertops, door handles, phones, and other devices is advised. When possible, other close contacts can move out of the house and seek shelter free of SARS-CoV-2. Findings from multiple studies indicate that policies concerning control of the spread SARS-CoV-2 are only partially effective and extension into the home as the most frequent site of viral transfer is reasonable (Hsiang et al., 2020; Xiao et al., 2020). One of the great advantages of home treatment of COVID-19 is the ability of an individual or family unit to maintain isolation and complete contact tracing. If therapy is offered in the home with delivery of medications, then trips to urgent care centers, clinics, and hospitals can be reduced or eliminated. This limits spread to drivers, other patients, staff, and healthcare workers. On the contrary, therapeutic nihilism on the part of primary care physicians and health systems drives anxiety and panic among patients with acute COVID-19 who feel abandoned, making them more likely to break quarantine and seek aid at urgent care centers, emergency rooms and hospitals.

SARS-CoV-2 exists outside the human body in a bioaerosol of airborne particles and droplets. Since exhaled air in an infected person is considered to be "loaded" with particulate inoculum, each exhalation and inhalation in theory reinoculates the nasopharynx and tracheobronchial tree (Chen, 2020). We propose that fresh circulating air could reduce reinoculation and potentially lessen the severity of illness and possibly limit household spread during quarantine (Melikov et al., 2020). This calls for open windows, fans for aeration, or spending long periods of time outdoors away from others with no face covering in order to disperse and not re-inhale the viral bioaerosol. These are principles used in the hospital with negative pressure ventilation deployed in isolation rooms to reduce bioaerosol contagion.

2. Adjunctive nutraceuticals

There has been considerable interest and study of the use of micronutrients and supplements for COVID-19 prophylaxis and treatment in combination with anti-infectives as first proposed by Zelenko and colleagues (Derwand et al., 2020). In general these agents are not curative but assist in treatment regimens to augment the therapeutic response. The aim of supplementation is to replenish in those with deficiencies associated with COVID-19 mortality, and to aid in reducing viral replication and tissue damage. Zinc deficiency is common among adults (Sharma et al., 2020). Zinc alone is a potent inhibitor of viral replication. Zinc in combination with hydroxychloroquine (HCQ) is potentially synergistic in reducing viral replication since HCQ is a zinc ionophore facilitating intracellular entry and inhibition of intracellular viral replication (Derwand and Scholz, 2020). This readily available nontoxic therapy could be deployed at the first signs of COVID-19 (Rahman

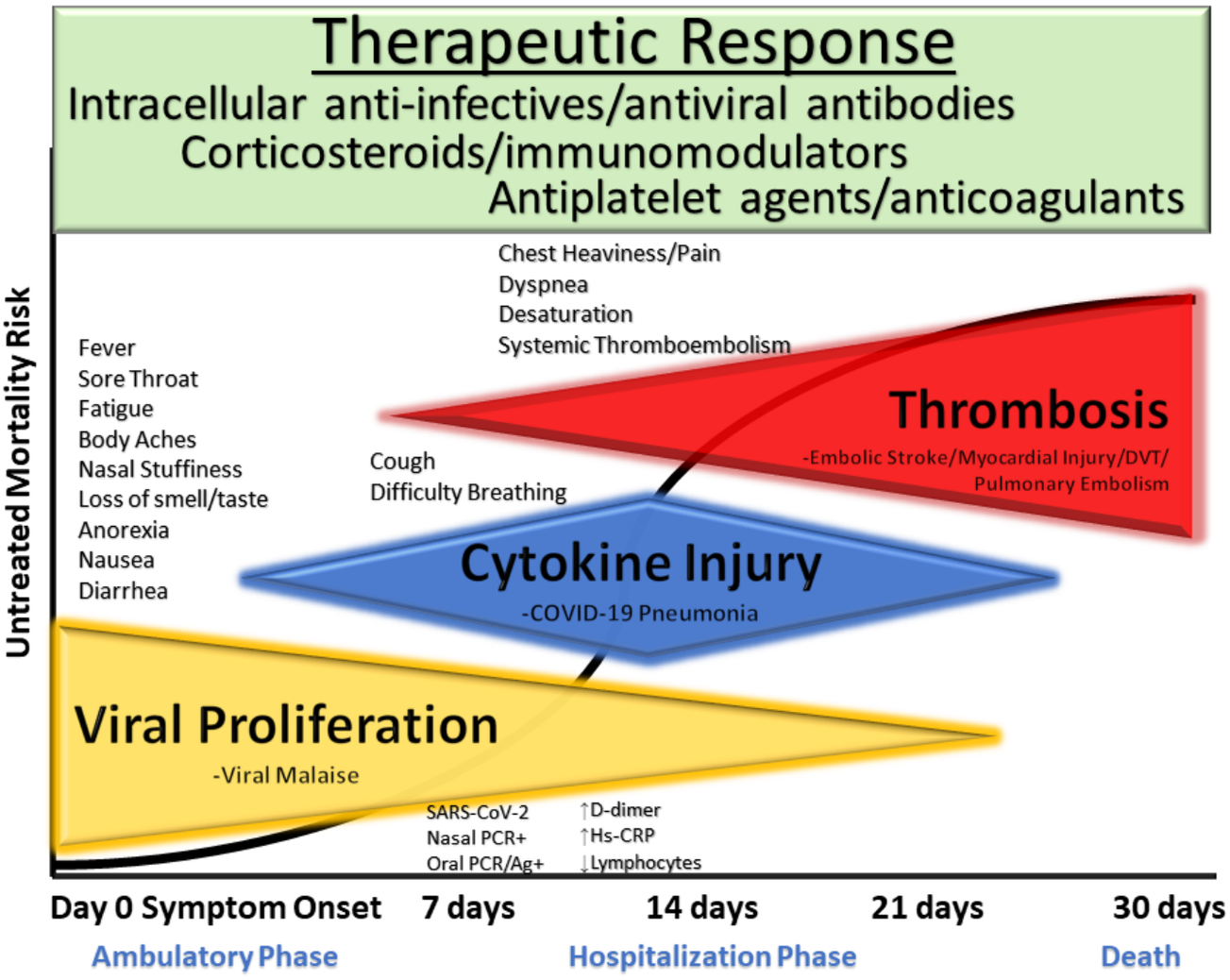

Fig. 2. Major dimensions of COVID-19 infection that call for a multi-drug strategy in the early ambulatory period with available medications including anti-infectives (hydroxychloroquine, ivermectin, azithromycin, doxycycline), corticosteroids, and anti-platelet drugs and anticoagulants. The three dimensions of the infection and their time-course allow for the sequenced multi-drug approach to be utilized with the goal of reducing hospitalization and death.

and Idid, 2020). Zinc sulfate 220 mg (50 mg elemental zinc) can be taken orally per day (Pormohammad et al., 2020).

Vitamin D deficiency has been associated with increased COVID-19 mortality and is commonly confounded by increasing age, obesity, diabetes, darker skin tones, and lack of fitness (Meltzer et al., 2020; Pereira et al., 2020) With good rationale, one small, randomized trial of vitamin D_3 supplementation found reduced mortality in patients with COVID-19 (Entrenas et al., 2020; Zhang et al., 2020a). The suggested dose is 5000 IU of vitamin D_3 per day.

Vitamin C has been used in a variety of viral infections and could be useful in combination with other supplements in COVID-19 (Carr and Rowe, 2020). Multiple randomized trials of vitamin C given intravenously or orally are planned or in progress at the time of this writing (Beigmohammadi et al., 2020; Liu et al., 2020) A reasonable dose would be vitamin C 3000 mg po qd.

Quercetin is a polyphenol that has a theoretical mechanism of action that could reduce the activity of a SARS-CoV-2 entry through the ACE2 receptor, inhibit viral proteases via conveyance of zinc, and attenuate inflammatory responses mediated through interleukin-6 (Bastaminejad and Bakhtiyari, 2020; Cione et al., 2019; Dabbagh-Bazarbachi et al., 2014; Derosa et al., 2020). The mechanisms of action favorably affect viral replication and immune response, so it is conceivable that this agent taken in combination with others discussed could play an assistive role in reducing early viral amplification and tissue damage (Colunga Biancatelli et al., 2020). The suggested dose of quercetin is 500 mg po bid.

3. Anti-infective therapy with intracellular activity

Quickly reducing the rate, quantity, and duration of viral replication, is a goal of antiviral therapy aimed at starting on the first day of symptomatic illness. The compelling rationale for prompt therapy is to minimize the degree of direct viral injury to the respiratory epithelium, vascular endothelium, and organs (Izzedine et al., 2020). Maladaptive host responses dependant on replication of SARS-CoV-2 could be attenuated by early initiation of combination anti-infectives including activation of inflammatory cells, cytokines, endothelial injury, and thrombosis (Singhania et al., 2020). Because SARS-CoV-2 infection is associated with severe disease and increased mortality in patients over age 50 years and those with one or more comorbidities, clinicians should use of at least two commercially available, anti-infective agents where it is

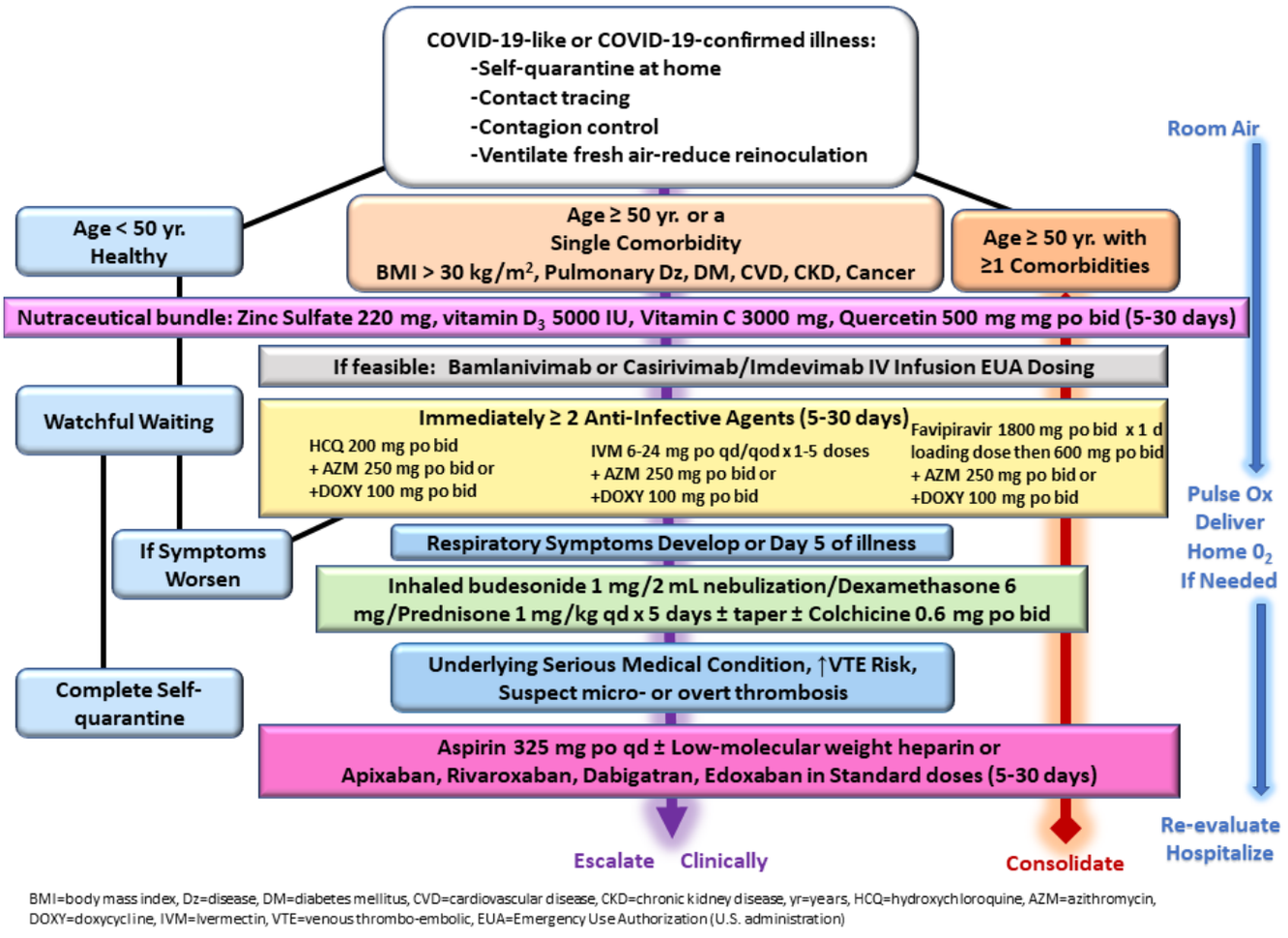

Fig. 3. Sequential multidrug treatment algorithm for ambulatory acute COVID-19 like and confirmed COVID-19 illness in patients in self-quarantine. Yr = year, BMI = body mass index, Dz = disease, DM = diabetes mellitus, CVD = cardiovascular disease, chronic kidney disease, HCQ = hydroxychloroquine, IVM = ivermectin, Mgt = management, Ox = oximetry, reproduced with permission from reference.

appropriately considered clinically indicated, medically necessary "off-label" prescription (Shojaei and Salari, 2020). Conversely, the decision to withhold oral therapy early in a potentially fatal illness should be made in a shared-decision making process with the patient given the full understanding that the natural untreated history of COVID-19 in high risk adults includes the risk of hospitalization, hospital-acquired complications, and death. The physician and patient should understand that the only method by which a hospitalization could be avoided would be the empiric use of SMDT that have a reasonable chance of success with acceptable safety. Recent expanded use authorization of IV administration of bamlanivimab is another option available to a limited number of patients, but supplies will be insufficient to treat everyone who meets the broad criteria for the therapy, so availability of oral alternatives remains essential.

4. Hydroxychloroquine

Hydroxychloroquine (HCQ) is an antimalarial/anti-inflammatory drug that impairs endosomal transfer of virions within human cells. HCQ is also a zinc ionophore that conveys zinc intracellularly to block the SARS-CoV-2 RNA-dependent RNA polymerase which is the core enzyme of the virus replication (te Velthuis et al., 2010). A continuously updated synthesis of HCQ studies supports the following (COVID-19 Treatment, 2020): 1) 63% of studies of HCQ administered late in the hospital course have demonstrated benefit, 2) 100% of the early treatment studies have demonstrated benefit with a composite 64% relative risk reduction in the progression of disease, hospitalization, and death (Arshad et al., 2020; Mikami et al., 2020; Prodromos and Rumschlag, 2020; Rosenberg et al., 2020). The small randomized trials to date are inconclusive for the following reasons: 1) no placebo control, 2) unblinded, 3) altered primary endpoints, 4) biased unblinded physician assigned endpoints (such as need for oxygen), 5) markedly truncated sample sizes and administrative termination of trials, 6) pretreatment with other antivirals.

Hydroxychloroquine was approved by the U.S. Food and Drug Administration in 1955, has been used by hundreds of millions of people worldwide since then, is sold over the counter in many countries and has a well characterized safety profile (Fram et al., 2020; Schrezenmeier and Dörner, 2020). Asymptomatic QT prolongation is well-recognized though an infrequent ($< 1\%$) occurrence with HCQ (Prodromos et al., 2020). In those with glucose-6-phosphate dehydrogenase deficiency HCQ should not be used (Aguilar, 2020). In the setting of acute severe COVID-19 illness, symptomatic arrhythmias can develop in the absence of HCQ and are attributed to cytokine storm and critical illness (Elsaid et al., 2020). Data safety and monitoring boards have not declared safety concerns in HCQ clinical trial published to date. Rare pa-

tients with a personal or family history of prolonged QT syndrome, those on additional QT prolonging, contraindicated drugs (e.g. dofetilide, sotalol), should be treated with caution and a plan to monitor the QTc in the ambulatory setting. A typical HCQ regimen is 200 mg bid for 5 to 30 days depending on continued symptoms.

5. Ivermectin

Ivermectin (IVM) is a broad spectrum anti-parasitic agent that has been shown to have anti-viral activity against a range of viruses including recently, SARS-CoV-2 (Heidary and Gharebaghi, 2020). This drug is well tolerated, has a high therapeutic index and proven safety profile with over 3.7 billion treatments, and has been used alone or combined with either doxycycline or azithromycin in early clinical studies of patients with COVID-19 (Rahman et al., 2020). There are a number of randomized and prospective studies and all have shown efficacy in clinical outcomes at the time of this report (Alam et al., 2020; Chowdhury et al., 2020; Gorial et al., 2020; Khan et al., 2020; Nunez et al., 2020). Hence, it is reasonable in patients where HCQ cannot be used and favipiravir is not available, that IVM (200-600 mcg/kg [6-36 mg] single oral dose given daily or every other day for 2-3 administrations) could be the base of SMDT intended to reduce viral replication early in the course of COVID-19. However, uncertainty remains at this time concerning optimal dosing and schedule (Schmith et al., 2020). In the ICON study, IVM use in the hospital was associated with a 48% relative risk reduction in COVID-19 mortality (Rajter et al., 2020). Currently, there are 36 randomized clinical trials of ivermectin alone or in combination for ambulatory and hospitalized patients listed on clinicaltrials.gov.

6. Favipiravir

Favipiravir is an oral selective inhibitor of RNA-dependent RNA polymerase, and is approved for ambulatory use in COVID-19 in multiple countries (Coomes and Haghbayan, 2020). Favipiravir is safe and it shortens viral nasal shedding to less than 7 days in most studies (Ivashchenko et al., 2020; Pilkington et al., 2020). A dose administration could be 1600-1800 mg po bid on day 1, following by 600-800 mg po bid for 14 days depending on the dose sizes available in 30 different countries (Li et al., 2020). At the time of this writing, there are large ambulatory clinical trials in progress but are not expected to report in time to aid in the crisis at hand in the U.S.

7. Antibiotics with intracellular anti-infective activity

Azithromycin (AZM) is a commonly used macrolide antibiotic that has antiviral properties mainly attributed to reduced endosomal transfer of virions as well as established anti-inflammatory effects (Pani et al., 2020). French reports indicated that AZM in combination with HCQ was associated with reduced durations of viral shedding, fewer hospitalizations, and reduced mortality as compared to those untreated (Lagier et al., 2020; Million et al., 2020). In a large observational inpatient study (n = 2451), those who received AZM alone had an adjusted hazard ratio for mortality of 1.05, 95% CI 0.68-1.62, $P = 0.83$ (Colunga Biancatelli et al., 2020). The combination of HCQ and AZM has been considered a standard of care outside the US for COVID-19 in more than 300,000 older adults with multiple comorbidities (Risch, 2020). AZM like HCQ can prolong the QTc in $< 1\%$ of patients, yet has demonstrated safety in co-administration with HCQ (Huang et al., 2020). A reasonable regimen is 250 mg po bid for 5 to 30 days for persistent symptoms or evidence of bacterial superinfection.

Doxycycline is another common antibiotic with multiple intracellular effects that may reduce viral replication, cellular damage, and expression of inflammatory factors (Malek et al., 2020; Sodhi and Etminan, 2020). It has been shown to have in vitro activity against COVID-19 at clinically used concentrations, acting in post-entry stages of the infection with SARS-CoV-2 in Vero E_6 cells (Gendrot et al., 2020). It has also been shown to concentrate in the lungs at levels twice that of plasma. When combined with ivermectin early in the infection it appears to enhance efficacy to near complete eradication of COVID-19 in less than 10 days. This drug has no effect on cardiac conduction and has the main caveat of gastrointestinal upset and esophagitis. Both AZM and doxycycline has the advantage of offering antibacterial coverage for superimposed bacterial and atypical infection in the upper respiratory tract (Ailani et al., 1999). Doxycycline can be dosed 200 mg po followed by 100 mg po bid for 5 to 30 days for persistent symptoms or evidence of bacterial superinfection.

8. Antibody therapy

Recently, bamlanivimab a monoclonal antibody directed against the SARS-CoV-2 spike protein has been approved for the early ambulatory treatment of COVID-19. In the BLAZE-1 randomized trial, the pooled secondary endpoint of COVID-19 hospitalizations occurred 4/136 and 7/69 of the Bamlanivimab and placebo groups respectively (Chen, 2020). While these results are not considered conclusive nor robust, given the emergency context, bamlanivimab is authorized for COVID-19 patients who are 12 years of age and older weighing at least 40 kg, and who are at high risk for progressing to severe COVID-19 or hospitalization. The authorized dosage for bamlanivimab is a single IV infusion of 700 mg administered as soon as possible after positive viral test for SARS-CoV-2 and within 10 days of symptom onset. The infusion should occur over an hour with another hour of monitoring for systemic reactions (expected $< 5\%$).

A humanized antibody blend of casirivimab and imdevimab has also received emergency approval in the United States and for a similar population as bamlanivimab. This pair of antibodies binds at different regions of the SARS-CoV-2 spike protein. This antibody combination is dosed 1,200 mg of casirivimab and 1,200 mg of imdevimab together as a single IV infusion over at least 60 minutes with another hour of monitoring for reactions (Regeneron Pharmaceuticals, Inc., 2020). In the phase II program, the secondary endpoint of hospitalization occurred in 8/434 and 10/231 of casirivimab/imdevimab and placebo groups, respectively. These results should be interpreted with caution and cannot be characterized as being conclusive or robust, yet as with all therapies discussed in this paper, casirivimab/imdevimab can be integrated into an innovative sequenced multi-drug regimen for SARS-CoV-2 infection.

If SARS-CoV-2 is diagnosed by rapid testing in a facility that performs antibody infusion such as an emergency room, urgent care center, or clinic, it is reasonable to start COVID-19 with the antibody infusion. Conversely, if it can be safely arranged by home infusion while maintaining quarantine, physicians may prescribe this therapy to augment the effects of longer courses of oral treat-

ment. At this time, it is unattractive to ask a patient to break quarantine and risk spread of infection to drivers and healthcare personnel in order to receive an outpatient infusion.

9. Corticosteroids

The manifestations of COVID-19 that prompt hospitalization and that may well lead to multi-organ system failure are attributed to a cytokine storm. The characteristic profile of an acutely ill COVID-19 patient includes leukocytosis with a relative neutropenia. Among COVID-19 patients, serum IL-6 and IL-10 levels are elevated in the critically ill (Han et al., 2020). In COVID-19, some of the first respiratory findings are cough and difficulty breathing. These features are attributable to inflammation and cytokine activation. Early use of oral corticosteroids is a rational intervention for COVID-19 patients with these features as they would be in other inflammatory lung disorders (Kolilekas et al., 2020; Singh et al., 2020). Inhaled budesonide 1 mg/2 mL via nebulizer or 200 mcg/inhaler up to every four hours can be utilized however, there are no published reports of efficacy in COVID-19. The RECOVERY trial randomized 6425 hospitalized patients with COVID-19 in a 2 : 1 ratio to open label dexamethasone 6 mg po/IV qd for up to 10 days and found dexamethasone reduced mortality, HR = 0.65, 95% CI 0.51-0.82, $P < 0.001$ (Horby et al., 2020) . Concordantly, a meta-analysis involving 1703 critically ill COVID-19 patients found a 36% relative risk reduction in death (Sterne et al., 2020). Safety concerns regarding prolonged viral replication with steroids have not been substantiated (Masiá et al., 2020). A clinical extension of these findings is administration of steroids in COVID-19 patients at home on day five or beyond with moderate or greater pulmonary symptoms (Szente Fonseca et al., 2020). Dexamethasone 6 mg po qd or prednisone 1 mg/kg can be given orally per day for five days with or without a subsequent taper.

10. Colchicine

Colchicine is a non-steroidal anti-mitotic drug used in gout and pericarditis which blocks metaphase of inflammatory cells by binding to the ends of microtubules preventing their intracellular assembly. The GRECCO-19 randomized open-label trial in 105 hospitalized patients with COVID-19 (treated with HCQ and AZM in 98 and 93% respectively) found that colchicine was associated with a reduction in D-dimer levels and improved clinical outcomes (Deftereos et al., 2020). The clinical primary end point (2-point change in World Health Organization ordinal scale) occurred in 14.0% in the control group (7 of 50 patients) and 1.8% in the colchicine group (1 of 55 patients) (odds ratio, 0.11; 95% CI, 0.01-0.96; $P = 0.02$) (World Health Organisation, 2020). Because the short-term safety profile is well understood, it is reasonable to consider this agent along with corticosteroids in an attempt to reduce the effects of cytokine storm and myopericarditis. A dosing scheme of 0.6 mg po bid x 3 days then 0.6 mg po qd for 30 days can be considered.

11. Antiplatelet agents and antithrombotics

Multiple studies have described increased rates of pathological macro and micro-thrombosis (Bösmüller et al., 2020; McFadyen et al., 2020). COVID-19 patients have described chest heaviness associated with desaturation that suggests the possibility of pulmonary thrombosis (Bhandari et al., 2020). Multiple reports have described elevated D-dimer levels in acutely ill COVID-19 patients which has been consistently associated with increased risk of deep venous thrombosis and pulmonary embolism (Artifoni et al., 2020; Chan et al., 2020; Mestre-Gómez et al., 2020). Autopsy studies have described pulmonary micro thrombosis and overt embolism with deep venous thrombus found in over half of fatal COVID-19 cases (Ackermann et al., 2020; Burlacu et al., 2020). These observations support the hypothesis that a unique endothelial injury and thrombosis are playing a role in oxygen desaturation, a cardinal reason for hospitalization and supportive care (Zhang et al., 2020b). Because thromboxane A_2 is markedly upregulated with SARS-CoV-2 infection, early administration of aspirin 325 mg per day is advised for initial antiplatelet and anti-inflammatory effects (Chow et al., 2020; Glatthaar-Saalmüller et al., 2017; A. Gupta et al., 2020a; Turshudzhyan, 2020). Ambulatory patients can also be treated with subcutaneous low-molecular weight heparin or with oral novel anticoagulant drugs (apixaban, rivaroxaban, edoxaban, dabigatran) in dosing schemes similar to those used in outpatient thromboprophylaxis. In a retrospective study of 2773 COVID-19 inpatients, 28% received anticoagulant therapy within 2 days of admission, and despite being used in more severe cases, anticoagulant administration was associated with a reduction in mortality, HR = 0.86 per day of therapy, 95% CI: 0.82-0.89; $P < 0.001$. Contemporary use of in hospital anticoagulants has remained in ~30% of cases (Vahidy et al., 2020) . Pre-emptive use of low molecular weight heparin or novel anticoagulants have been associated with $> 50\%$ reduction in COVID-19 mortality (Billett et al., 2020). Anticoagulants also reduce death in COVID-19 hospitalized patients with thrombotic complications, elevated D-dimer levels, and higher comorbidity scores (Tang et al., 2020) . Finally, many acutely ill outpatients also have general indications or risk for cardioembolic/venous thromboembolic prophylaxis applicable to COVID-19 (Moores et al., 2020; Ruocco et al., 2020). There are ambulatory randomized trials of aspirin and novel oral anticoagulants underway. However, given reports of catastrophic stroke and systemic thromboembolism and the large reductions in mortality for both prophylactic and therapeutic use, administration of aspirin 325 mg po qd for all COVID-19 high-risk patients and systemic anticoagulation is prudent in patients with a history of heart, lung, kidney, or malignant disease (Yamakawa et al., 2020).

12. Delivery of oxygen and monitoring

Telemedicine is a tractable means for the initial evaluation and management of COVID-19 allowing the patient to remain in self-quarantine at home. Clinical impressions of the patient can be gained with audio and video feeds. Key supplemental information includes self/family measurement of vital signs and temperature. A significant component of safe outpatient management is maintenance of arterial oxygen saturation on room air or prescribed home oxygen (oxygen concentrators) under direct supervision by daily telemedicine with escalation to hospitalization for assisted ventilation if needed. Self-proning could be entertained for medically sophisticated patients with good at-home monitoring (Westafer et al., 2020) .

The interventions discussed in this review could be extended to seniors in COVID-19 treatment units within nursing homes and other non-hospital settings. In addition to oral medications, these centers could deliver intravenous fluid and parenteral medications (i.e. bamlanivimab, casirivimab/imdevimab), oxygen, and assisted pressure ventilation with the goal of reducing the risk of

hospital transfer.

13. Summary

The SARS-CoV-2 outbreak is a once in a hundred-year pandemic that has not been addressed by rapid establishment of infrastructure amenable to support the conduct of large, randomized trials in outpatients in the community setting. The early flu-like stage of viral replication provides a therapeutic window of tremendous opportunity to potentially reduce the risk of more severe sequelae in high risk patients. Precious time is squandered with a "wait and see" approach in which there is no anti-viral treatment as the condition worsens, possibly resulting in unnecessary hospitalization, morbidity, and death. Once infected, the only means of preventing a hospitalization in a high-risk patient is to apply treatment before arrival of symptoms that prompt paramedic calls or emergency room visits. Given the current failure of government support for randomized clinical trials evaluating widely available, generic, inexpensive therapeutics, and the lack of instructive outpatient treatment guidelines (U.S., Canada, U.K., Western EU, Australia, some South American Countries), clinicians must act according to clinical judgement and in shared decision making with fully informed patients. Early SMDT developed empirically based upon pathophysiology and evidence from randomized data and the treated natural history of COVID-19 has demonstrated safety and efficacy. In newly diagnosed, high-risk, symptomatic patients with COVID-19, SMDT has a reasonable chance of therapeutic gain with an acceptable benefit-to-risk profile. Until the pandemic closes with population-level herd immunity potentially augmented with vaccination, early ambulatory SMDT should be a standard practice in high risk and severely symptomatic acute COVID-19 patients beginning at the onset of illness.

Footnote: To understand which drugs are being used in the early treatment of COVID-19 in these countries' websites of government agencies such as Brazil, Peru, Spain, Taiwan, and USA were searched. We also looked for researchers published in PUBMED by China, France, India, Korea, and African countries. Additional Information was also obtained from reliable sources of internet such as Argentina, Bangladesh, Colombia, Mexico and African Countries.

Author contributions

PAM wrote the first draft and created the figures, all authors provided critical edits and comments, PEA did the final proofreading and key finalization of the text. SR created the first draft of the table.

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Conflict of Interest

There is nothing to disclose. Author had access to the data and wrote the manuscript.

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References

AAPS. (2020) A Guide to Home-Based COVID Treatment. American Association of Pharmaceutical Scientists. Available at: https://aapsonline.org/covidpatientguide/.

Ackermann, M., Verleden, S. E., Kuehnel, M., Haverich, A., Welte, T., Laenger, F., Vanstapel, A., Werlein, C., Stark, H., Tzankov, A., Li, W. W., Li, V. W., Mentzer, S. J. and Jonigk, D. (2020) Pulmonary Vascular Endothelialitis, Thrombosis, and Angiogenesis in Covid-19. *New England Journal of Medicine* **383**, 120-128.

Agencia Española de Medicamentos y Productos Sanitarios. Información acerca del uso de hidroxicloroquina para el tratamiento de COVID-19. Available at https://www.aemps.gob.es/informa/notasinformativas/laaemps/2020-laaemps/informacion-acerca-del-uso-de-hidroxicloroquina-para-el-tratamiento-de-covid-19/ (Acessed: 11 November, 2020).

Aguilar, J. (2020) Hemolytic Anemia in a Glucose-6-Phosphate Dehydrogenase-Deficient Patient Receiving Hydroxychloroquine for COVID-19: A Case Report. *The Permanente Journal* **24**, 20.158.

Ailani, R. K., Agastya, G., Ailani, R. K., Mukunda, B. N. and Shekar, R. (1999) Doxycycline is a cost-effective therapy for hospitalized patients with community-acquired pneumonia. *Archives of internal medicine* **159**, 266-270.

Alam, M. T., Murshed, R., Bhiuyan, E., Saber, S., Alam, R. F. & Choudhury Robin, R. (2020). A Case Series of 100 COVID-19 Positive Patients Treated with Combination of Ivermectin and Doxycycline. Journal of Bangladesh College of Physicians and Surgeons, 38.

Argenziano, M. G., Bruce, S. L., Slater, C. L., Tiao, J. R., Baldwin, M. R., Barr, R. G., Chang, B. P., Chau, K. H., Choi, J. J., Gavin, N., Goyal, P., Mills, A. M., Patel, A. A., Romney, M. S., Safford, M. M., Schluger, N. W., Sengupta, S., Sobieszczyk, M. E., Zucker, J. E., Asadourian, P. A., Bell, F. M., Boyd, R., Cohen, M. F., Colquhoun, M. I., Colville, L. A., de Jonge, J. H., Dershowitz, L. B., Dey, S. A., Eiseman, K. A., Girvin, Z. P., Goni, D. T., Harb, A. A., Herzik, N., Householder, S., Karaaslan, L. E., Lee, H., Lieberman, E., Ling, A., Lu, R., Shou, A. Y., Sisti, A. C., Snow, Z. E., Sperring, C. P., Xiong, Y., Zhou, H. W., Natarajan, K., Hripcsak, G. and Chen, R. (2020) Characterization and clinical course of 1000 patients with coronavirus disease 2019 in New York: retrospective case series. British Medical Journal **369**, m1996.

Arshad, S., Kilgore, P., Chaudhry, Z. S., Jacobsen, G., Wang, D. D., Huitsing, K., Brar, I., Alangaden, G. J., Ramesh, M. S., McKinnon, J. E., O'Neill, W. and Zervos, M. (2020) Treatment with hydroxychloroquine, azithromycin, and combination in patients hospitalized with COVID-19. *International Journal of Infectious Diseases* **97**, 396-403.

Artifoni, M., Danic, G., Gautier, G., Gicquel, P., Boutoille, D., Raffi, F., Néel, A. and Lecomte, R. (2020) Systematic assessment of venous thromboembolism in COVID-19 patients receiving thromboprophylaxis: incidence and role of D-dimer as predictive factors. *Journal of Thrombosis and Thrombolysis* **50**, 211-216.

Bastaminejad, S. and Bakhtiyari, S. (2020) Quercetin and its relative therapeutic potential against COVID-19: A retrospective review and prospective overview. *Current Molecular Medicine* **20**. Epub ahead of print.

Beigmohammadi, M. T., Bitarafan, S., Hoseindokht, A., Abdollahi, A., Amoozadeh, L., Mahmoodi Ali Abadi, M. and Foroumandi, M. (2020) Impact of vitamins A, B, C, D, and E supplementation on improvement and mortality rate in ICU patients with coronavirus-19: a structured summary of a study protocol for a randomized controlled trial. *Trials* **21**, 614.

Belayneh, A. (2020) Off-Label Use of Chloroquine and Hydroxychloroquine for COVID-19 Treatment in Africa Against WHO Recommendation. *Research and Reports in Tropical Medicine* **11**, 61-72.

Bhandari, S., Rankawat, G., Bagarhatta, M., Singh, A., Singh, A., Gupta, V., Sharma, S. and Sharma, R. (2020) Clinico-Radiological Evaluation and Correlation of CT Chest Images with Progress of Disease in COVID-19 Patients. *The Journal of the Association of Physicians of India* **68**, 34-42.

Bhimraj, A., Morgan, R. L., Shumaker, A. H., Lavergne, V., Baden, L., Cheng, V. C. C., Edwards, K. M., Gandhi, R., Gallagher, J., Muller, W. J., O'Horo, J. C., Shoham, S., M. Murad, H., Mustafa, R. A., Sultan, S. and Falck-Ytter, Y. (2020) Infectious diseases society of America guidelines on the treatment and management of patients with COVID-19. Available at: https://www.idsociety.org/practice-guideline/covid-19-guideline-treatment-and-management/.

Billett, H. H., Reyes-Gil, M., Szymanski, J., Ikemura, K., Stahl, L. R., Lo, Y., Rahman, S., Gonzalez-Lugo, J. D., Kushnir, M., Barouqa, M., Golestaneh, L. and Bellin, E. (2020) Anticoagulation in COVID-19: Effect of Enoxaparin, Heparin, and Apixaban on Mortality. *Thromb Haemost*. Epub ahead of print.

Brian, W. (2020) Covid-19: Algeria and Morocco continue using chloroquine despite concerns. al-bab.com. Available at: https://al-bab.com/blog/2020/05/covid-19-algeria-and-morocco-continue-using-chloroquine-despite-concerns (Accessed: 11 November, 2020).

Bösmüller, H., Traxler, S., Bitzer, M., Häberle, H., Raiser, W., Nann, D., Frauenfeld, L., Vogelsberg, A., Klingel, K. and Fend, F. (2020) The evolution of pulmonary pathology in fatal COVID-19 disease: an autopsy study with clinical correlation. *Virchows Archiv* **477**, 349-357.

Burlacu, A., Genovesi, S., Popa, I. V. and Crisan-Dabija, R. (2020) Unpuzzling COVID-19 Prothrombotic State: Are Preexisting Thrombophilic Risk Profiles Responsible for Heterogenous Thrombotic Events? *Clinical and Applied Thrombosis/Hemostasis* **26**, 1076029620952884.

Carr, A. C. and Rowe, S. (2020) The Emerging Role of Vitamin C in the Prevention and Treatment of COVID-19. *Nutrients* **12**.

Chan, K. H., Slim, J. and Shaaban, H. S. (2020) Pulmonary Embolism and Increased Levels of D-Dimer in Patients with Coronavirus Disease. *Emerging Infectious Diseases* **26**, 2522-2533.

Chen, L. D. (2020) Effects of ambient temperature and humidity on droplet lifetime - A perspective of exhalation sneeze droplets with COVID-19 virus transmission. *International Journal of Hygiene and Environmental Health* **229**, 113568.

Chen, P., Nirula, A., Heller, B., Gottlieb, R. L., Boscia, J., Morris, J., Huhn, G., Cardona, J., Mocherla, B., Stosor, V., Shawa, I., Adams, A. C., Van Naarden, J., Custer, K. L., Shen, L., Durante, M., Oakley, G., Schade, A. E., Sabo, J., Patel, D. R., Klekotka, P. and Skovronsky, D. M. (2020) SARS-CoV-2 Neutralizing Antibody LY-CoV555 in Outpatients with Covid-19. *The New England Journal of Medicine* NEJMoa2029849. Epub ahead of print.

Chow, J. H., Khanna, A. K., Kethireddy, S., Yamane, D., Levine, A., Jackson, A. M., McCurdy, M. T., Tabatabai, A., Kumar, G., Park, P., Benjenk, I., Menaker, J., Ahmed, N., Glidewell, E., Presutto, E., Cain, S., Haridasa, N., Field, W., Fowler, J. G., Trinh, D., Johnson, K. N., Kaur, A., Lee, A., Sebastian, K., Ulrich, A., Peña, S., Carpenter, R., Sudhakar, S., Uppal, P., Fedeles, B. T., Sachs, A., Dahbour, L., Teeter, W., Tanaka, K., Galvagno, S. M., Herr, D. L., Scalea, T. M. and Mazzeffi, M. A. (2020) Aspirin Use is Associated with Decreased Mechanical Ventilation, ICU Admission, and In-Hospital Mortality in Hospitalized Patients with COVID-19. *Anesthesia & Analgesia*. Online ahead of print.

Chowdhury, A., Shahbaz, M., Karim, M.R., Islam, J., Guo, D. and He, S. (2020). A Randomized Trial of Ivermectin-Doxycycline and Hydroxychloroquine-Azithromycin therapy on COVID19 patients. Research Square, published online. doi: 10.21203/rs.3.rs-38896/v1

Cione, E., La Torre, C., Cannataro, R., Caroleo, M. C., Plastina, P. and Gallelli, L. (2019) Quercetin, Epigallocatechin Gallate, Curcumin, and Resveratrol: From Dietary Sources to Human MicroRNA Modulation. *Molecules* **25**.

Emiliano Rodríguez Mega. Colombia Latin America's embrace of an unproven COVID treatment is hindering drug trials. October 2020. Available from: https://www.nature.com/articles/d41586-020-02958-2 (Acessed: 11 Novemeber, 2020).

Colunga Biancatelli, R. M. L., Berrill, M., Catravas, J. D. and Marik, P. E. (2020) Quercetin and Vitamin C: An Experimental, Synergistic Therapy for the Prevention and Treatment of SARS-CoV-2 Related Disease (COVID-19). *Frontiers in Immunology* **11**, 1451.

Coronavirus a Tarde. Ministério da saúde avalia distribuir kit Covid de graça Sptember 2020. Available at: https://coronavirus.atarde.com.br/ministerio-da-saude-avalia-distribuir-kit-covid-de-graca/ (Cited: 11 November, 2020).

Coomes, E. A. and Haghbayan, H. (2020) Favipiravir, an antiviral for COVID-19? *Journal of Antimicrobial Chemotherapy* **75**, 2013-2014.

COVID-19 Treatment. 2020. Available at: https://c19study.com/.

COVID-19 Treatment Guidelines. 2020. Available at: https://www.covid19treatmentguidelines.nih.gov/ (Accessed: 25 November, 2020).

Dabbagh-Bazarbachi, H., Clergeaud, G., Quesada, I. M., Ortiz, M., O'Sullivan, C. K. and Fernández-Larrea, J. B. (2014) Zinc ionophore activity of quercetin and epigallocatechin-gallate: from Hepa 1-6 cells to a liposome model. *Journal of Agricultural and Food Chemistry* **62**, 8085-8093.

Deftereos, S. G., Giannopoulos, G., Vrachatis, D. A., Siasos, G. D., Giotaki, S. G., Gargalianos, P., Metallidis, S., Sianos, G., Baltagiannis, S., Panagopoulos, P., Dolianitis, K., Randou, E., Syrigos, K., Kotanidou, A., Koulouris, N. G., Milionis, H., Sipsas, N., Gogos, C., Tsoukalas, G., Olympios, C. D., Tsagalou, E., Migdalis, I., Gerakari, S., Angelidis, C., Alexopoulos, D., Davlouros, P., Hahalis, G., Kanonidis, I., Katritsis, D., Kolettis, T., Manolis, A. S., Michalis, L., Naka, K. K., Pyrgakis, V. N., Toutouzas, K. P., Triposkiadis, F., Tsioufis, K., Vavouranakis, E., Martinèz-Dolz, L., Reimers, B., Stefanini, G. G., Cleman, M., Goudevenos, J., Tsiodras, S., Tousoulis, D., Iliodromitis, E., Mehran, R., Dangas, G. and Stefanadis, C. (2020) Effect of Colchicine vs Standard Care on Cardiac and Inflammatory Biomarkers and Clinical Outcomes in Patients Hospitalized With Coronavirus Disease 2019: The GRECCO-19 Randomized Clinical Trial. *JAMA Network Open* **3**, e2013136.

Derosa, G., Maffioli, P., D'Angelo, A. and Di Pierro, F. (2020) A role for quercetin in coronavirus disease 2019 (COVID-19). *Phytotherapy Research* 10.1002/ptr.6887. Online ahead of print.

Derwand, R. and Scholz, M. (2020) Does zinc supplementation enhance the clinical efficacy of chloroquine/hydroxychloroquine to win today's battle against COVID-19? *Medical Hypotheses* **142**, 109815.

Derwand, R., Scholz, M. and Zelenko, V. (2020) COVID-19 outpatients: early risk-stratified treatment with zinc plus low-dose hydroxychloroquine and azithromycin: a retrospective case series study. *International Journal of Antimicrobial Agents* **56**, 106214.

Diario oficial del bicentenario. Modifican el Documento Técnico: Prevención, Diagnóstico y Tratamiento de personas afectadas por COVID-19 en el Perú . Available from https://busquedas.elperuano.pe/normaslegales/modifican-el-documento-tecnico-prevencion-diagnostico-y-tr-resolucion-ministerial-n-270-2020-minsa-1866159-4/ (Acessed November 11, 2020).

Elsaid, O., McCullough, P. A., Tecson, K. M., Williams, R. S. and Yoon, A. (2020) Ventricular Fibrillation Storm in Coronavirus 2019. *American Journal of Cardiology* **135**, 177-180.

Entrenas Castillo, M., Entrenas Costa, L. M., Vaquero Barrios, J. M., Alcalá Díaz, J. F., López Miranda, J., Bouillon, R. and Quesada Gomez, J. M. (2020) "Effect of calcifediol treatment and best available therapy versus best available therapy on intensive care unit admission and mortality among patients hospitalized for COVID-19: A pilot randomized clinical study". *The Journal of Steroid Biochemistry and Molecular Biology* **203**, 105751.

Fan, L., Jiang, S., Yang, X., Wang, Z. and Yang, C. (2020) COVID-19 Drug Treatment in China. *Current Pharmacology Reports,* 1-9.

Felix, T. (2020) Nigeria goes on with hydroxychloroquine clinical trials. Anadolu Agency. Available at: https://www.aa.com.tr/en/africa/nigeria-goes-on-withhydroxychloroquine-clinical-trials/1854814 (Accessed: 19 August, 2020).

Fram, G., Wang, D. D., Malette, K., Villablanca, P., Kang, G., So, K., Basir, M. B., Khan, A., McKinnon, J. E., Zervos, M. and O'Neill, W. W. (2020) Cardiac Complications Attributed to Hydroxychloroquine: A systematic review of the Literature Pre-COVID-19. *Current Cardiology Reviews*.

Gendrot, M., Andreani, J., Jardot, P., Hutter, S., Delandre, O., Boxberger, M., Mosnier, J., Le Bideau, M., Duflot, I., Fonta, I., Rolland, C., Bogreau, H., La Scola, B. and Pradines, B. (2020) In Vitro Antiviral Activity of Doxycycline against SARS-CoV-2. *Molecules* **25**.

Centers for Disease Control and Prevention. Available at:

https://www.cdc.gov/coronavirus/2019-ncov/covid-data/ccovidview/05152020/covid-like-illness.html (Accessed: 03 July, 2020).

Gérard, A., Romani, S., Fresse, A., Viard, D., Parassol, N., Granvuillemin, A., Chouchana, L., Rocher, F. and Drici, M. D. (2020) "Off-label" use of hydroxychloroquine, azithromycin, lopinavir-ritonavir and chloroquine in COVID-19: A survey of cardiac adverse drug reactions by the French Network of Pharmacovigilance Centers. *Thérapie* **75**, 371-379.

Glatthaar-Saalmüller, B., Mair, K. H. and Saalmüller, A. (2017) Antiviral activity of aspirin against RNA viruses of the respiratory tract-an in vitro study. *Influenza and Other Respiratory Viruses* **11**, 85-92.

Gopalakrishnan, A., Mossaid, A., Lo, K. B., Vasudevan, V., McCullough, P. A. and Rangaswami, J. (2020) Fulminant Acute Kidney Injury in a Young Patient with Novel Coronavirus 2019. *CardioRenal Medicine* **10**, 217-222.

Gorial, F., Mashhadani, S., Sayaly, H.M., Dakhil, B.D., AlMashhadani, M., Aljabory, A.M., Avvas, H.M., Ghanim, M. and Rasheed, J. (2020) Effectiveness of Ivermectin as add-on Therapy in COVID-19 Management (Pilot Trial). MedRxiv, printed online.

Gupta, A., Kalantar-Zadeh, K. and Reddy, S. T. (2020a) Ramatroban as a Novel Immunotherapy for COVID-19. *Journal of Molecular and Genetic Medicine*.

Gupta, S., Coca, S. G., Chan, L., Melamed, M. L., Brenner, S. K., Hayek, S. S., Sutherland, A., Puri, S., Srivastava, A., Leonberg-Yoo, A., Shehata, A. M., Flythe, J. E., Rashidi, A., Schenck, E. J., Goyal, N., Hedayati, S. S., Dy, R., Bansal, A., Athavale, A., Nguyen, H. B., Vijayan, A., Charytan, D. M., Schulze, C. E., Joo, M. J., Friedman, A. N., Zhang, J., Sosa, M. A., Judd, E., Velez, J. C. Q., Mallappallil, M., Redfern, R. E., Bansal, A. D., Neyra, J. A., Liu, K. D., Renaghan, A. D., Christov, M., Molnar, M. Z., Sharma, S., Kamal, O., Boateng, J. O., Short, S. A. P., Admon, A. J., Sise, M. E., Wang, W., Parikh, C. R. and Leaf, D. E. (2020a) AKI Treated with Renal Replacement Therapy in Critically Ill Patients with COVID-19. *Journal of the American Society of Nephrology*.

Gupta, S., Hayek, S. S., Wang, W., Chan, L., Mathews, K. S., Melamed, M. L., Brenner, S. K., Leonberg-Yoo, A., Schenck, E. J., Radbel, J., Reiser, J., Bansal, A., Srivastava, A., Zhou, Y., Sutherland, A., Green, A., Shehata, A. M., Goyal, N., Vijayan, A., Velez, J. C. Q., Shaefi, S., Parikh, C. R., Arunthamakun, J., Athavale, A. M., Friedman, A. N., Short, S. A. P., Kibbelaar, Z. A., Abu Omar, S., Admon, A. J., Donnelly, J. P., Gershengorn, H. B., Hernán, M. A., Semler, M. W. and Leaf, D. E. (2020b) Factors Associated With Death in Critically Ill Patients With Coronavirus Disease 2019 in the US. *JAMA Internal Medicine* **180**, 1-12.

Han, H., Ma, Q., Li, C., Liu, R., Zhao, L., Wang, W., Zhang, P., Liu, X., Gao, G., Liu, F., Jiang, Y., Cheng, X., Zhu, C. and Xia, Y. (2020) Profiling serum cytokines in COVID-19 patients reveals IL-6 and IL-10 are disease severity predictors. *Emerging Microbes & Infections* **9**, 1123-1130.

Heidary, F. and Gharebaghi, R. (2020) Ivermectin: a systematic review from antiviral effects to COVID-19 complementary regimen. *The Journal of Antibiotics* **73**, 593-602.

Hong, K. S., Jang, J. G., Hur, J., Lee, J. H., Kim, H. N., Lee, W. and Ahn, J. H. (2020) Early Hydroxychloroquine Administration for Rapid Severe Acute Respiratory Syndrome Coronavirus 2 Eradication. *Journal of Infection and Chemotherapy* **52**, 396-402.

Horby, P., Lim, W. S., Emberson, J. R., Mafham, M., Bell, J. L., Linsell, L., Staplin, N., Brightling, C., Ustianowski, A., Elmahi, E., Prudon, B., Green, C., Felton, T., Chadwick, D., Rege, K., Fegan, C., Chappell, L. C., Faust, S. N., Jaki, T., Jeffery, K., Montgomery, A., Rowan, K., Juszczak, E., Baillie, J. K., Haynes, R. and Landray, M. J. (2020) Dexamethasone in Hospitalized Patients with Covid-19 - Preliminary Report. *New England Journal of Medicine.*

Hsiang, S., Allen, D., Annan-Phan, S., Bell, K., Bolliger, I., Chong, T., Druckenmiller, H., Huang, L. Y., Hultgren, A., Krasovich, E., Lau, P., Lee, J., Rolf, E., Tseng, J. and Wu, T. (2020) The effect of large-scale anti-contagion policies on the COVID-19 pandemic. *Nature* **584**, 262-267.

Huang, H. D., Jneid, H., Aziz, M., Ravi, V., Sharma, P. S., Larsen, T., Chatterjee, N., Saour, B., Aziz, Z., Nayak, H., Trohman, R. G. and Krishnan, K. (2020) Safety and Effectiveness of Hydroxychloroquine and Azithromycin Combination Therapy for Treatment of Hospitalized Patients with COVID-19: A Propensity-Matched Study. *Cardiology and Therapy* **9**, 523-534.

Huaxia. Senegal Roundup: Senegal to continue to treat COVID-19 patients with anti-malaria drugs: expert. *XINHUANET*. Available at: http://www.xinhuanet.com/english/2020-06/07/c_139119593.htm.

Isaac K. Ghana, Kenya approve the use of Chloroquine to treat COVID-19 patients. Taylor and Francis group. 2020. Available at: https://africafeeds.com/2020/04/01/ghana-kenya-approve-use-of-chloroquine-to-treat-covid-19-patients/ (Accessed: 10 November, 2020).

Ivashchenko, A. A., Dmitriev, K. A., Vostokova, N. V., Azarova, V. N., Blinow, A. A., Egorova, A. N., Gordeev, I. G., Ilin, A. P., Karapetian, R. N., Kravchenko, D. V., Lomakin, N. V., Merkulova, E. A., Papazova, N. A., Pavlikova, E. P., Savchuk, N. P., Simakina, E. N., Sitdekov, T. A., Smolyarchuk, E. A., Tikhomolova, E. G., Yakubova, E. V. and Ivachtchenko, A. V. (2020) AVIFAVIR for Treatment of Patients with Moderate COVID-19: Interim Results of a Phase II/III Multicenter Randomized Clinical Trial. *Clinical Infectious Diseases*.

Izzedine, H., Jhaveri, K. D. and Perazella, M. A. (2020) COVID-19 therapeutic options for patients with kidney disease. *Kidney International* **97**, 1297-1298.

Jefferson, T., Spencer, E. A., Brassey, J. and Heneghan, C. (2020) SARS-CoV-2 and the Role of Orofecal Transmission: Evidence Brief. In: Analysis of the Transmission Dynamics of COVID-19: An Open Evidence Review. The Centre for Evidence-Based Medicine. Available at: https://www.cebm.net/covid-19/sars-cov-2-orofecal-transmission/.

Katharine C. EXCLUSIVE: SA to roll out chloroquine to tackle coronavirus. South African Broadcasting Corporation. 2020. Available from https://www.businesslive.co.za/fm/features/2020-03-27-sa-to-roll-out-chloroquine-to-tackle-coronavirus/ (Accessed: 19 August, 2020).

Khan, M. S. I., Khan, M. S. I., Debnath, C. R., Nath, P. N., Mahtab, M. A., Nabeka, H., Matsuda, S. and Akbar, S. M. F. (2020) Ivermectin Treatment May Improve the Prognosis of Patients With COVID-19. *Archivos de Bronconeumología* **56**, 828-830.

Kolilekas, L., Loverdos, K., Giannakaki, S., Vlassi, L., Levounets, A., Zervas, E. and Gaga, M. (2020) Can steroids reverse the severe COVID-19 induced "cytokine storm"? *Journal of Medical Virology* **92**, 2866-2869.

Lagier, J. C., Million, M., Gautret, P., Colson, P., Cortaredona, S., Giraud-Gatineau, A., Honoré, S., Gaubert, J. Y., Fournier, P. E., Tissot-Dupont, H., Chabrière, E., Stein, A., Deharo, J. C., Fenollar, F., Rolain, J. M., Obadia, Y., Jacquier, A., La Scola, B., Brouqui, P., Drancourt, M., Parola, P. and Raoult, D. (2020) Outcomes of 3,737 COVID-19 patients treated with hydroxychloroquine/azithromycin and other regimens in Marseille, France: A retrospective analysis. *Travel Medicine and Infectious Disease* **36**, 101791.

Li, J., Zhang, C., Wu, Z., Wang, G. and Zhao, H. (2020) The Mechanism and Clinical Outcome of patients with Corona Virus Disease 2019 Whose Nucleic Acid Test has changed from negative to positive, and the therapeutic efficacy of Favipiravir: A structured summary of a study protocol for a randomised controlled trial. *Trials* **21**, 488.

Liu, F., Zhu, Y., Zhang, J., Li, Y. and Peng, Z. (2020) Intravenous high-dose vitamin C for the treatment of severe COVID-19: study protocol for a multicentre randomised controlled trial. *BMJ Open* **10**, e039519.

Malek, A. E., Granwehr, B. P. and Kontoyiannis, D. P. (2020) Doxycycline as a potential partner of COVID-19 therapies. *IDCases* **21**, e00864.

Masiá, M., Fernández-González, M., García, J. A., Padilla, S. and Gutiérrez, F. (2020) Lack of detrimental effect of corticosteroids on antibody responses to SARS-CoV-2 and viral clearance in patients hospitalized with COVID-19. *Journal of Infection*.

McCullough, P. A., Eidt, J., Rangaswami, J., Lerma, E., Tumlin, J., Wheelan, K., Katz, N., Lepor, N. E., Vijay, K., Soman, S., Singh, B., McCullough, S. P., McCullough, H. B., Palazzuoli, A., Ruocco, G. M. and Ronco, C. (2020a) Urgent need for individual mobile phone and institutional reporting of at home, hospitalized, and intensive care unit cases of SARS-CoV-2 (COVID-19) infection. *Reviews in Cardiovascular Medicine* **21**, 1-7.

McCullough, P. A., Kelly, R. J., Ruocco, G., Lerma, E., Tumlin, J., Wheelan, K. R., Katz, N., Lepor, N. E., Vijay, K., Carter, H., Singh, B., McCullough, S. P., Bhambi, B. K., Palazzuoli, A., De Ferrari, G. M., Milligan, G. P., Safder, T., Tecson, K. M., Wang, D. D., McKinnon, J. E., O'Neill, W. W., Zervos, M. and Risch, H. A. (2020b) Pathophysiological Basis and Rationale for Early Outpatient Treatment of SARS-CoV-2 (COVID-19) Infection. *The American Journal of Medicine* **134**, 16-22.

McFadyen, J. D., Stevens, H. and Peter, K. (2020) The Emerging Threat of (Micro)Thrombosis in COVID-19 and Its Therapeutic Implications. *Circulation Research* **127**, 571-587.

Mega, E. R. (2020) Latin America's embrace of an unproven COVID treatment is hindering drug trials. *Nature* **586**, 481-482.

Melikov, A. K., Ai, Z. T. and Markov, D. G. (2020) Intermittent occupancy combined with ventilation: An efficient strategy for the reduction of airborne transmission indoors. *Science of the Total Environment* **744**, 140908.

Meltzer, D. O., Best, T. J., Zhang, H., Vokes, T., Arora, V. and Solway, J. (2020) Association of Vitamin D Status and Other Clinical Characteristics With COVID-19 Test Results. *JAMA Network Open* **3**, e2019722.

Mestre-Gómez, B., Lorente-Ramos, R. M., Rogado, J., Franco-Moreno, A., Obispo, B., Salazar-Chiriboga, D., Saez-Vaquero, T., Torres-Macho, J., Abad-Motos, A., Cortina-Camarero, C., Such-Diaz, A., Ruiz-Velasco, E., Churruca-Sarasqueta, J. and Muñoz-Rivas, N. (2020) Incidence of pulmonary embolism in non-critically ill COVID-19 patients. Predicting factors for a challenging diagnosis. *Journal of Thrombosis and Thrombolysis* , 1-7.

Mikami, T., Miyashita, H., Yamada, T., Harrington, M., Steinberg, D., Dunn, A. and Siau, E. (2020) Risk Factors for Mortality in Patients with COVID-19 in New York City. *Journal of General Internal Medicine*, 1-10.

Million, M., Lagier, J. C., Gautret, P., Colson, P., Fournier, P. E., Amrane, S., Hocquart, M., Mailhe, M., Esteves-Vieira, V., Doudier, B., Aubry, C., Correard, F., Giraud-Gatineau, A., Roussel, Y., Berenger, C., Cassir, N., Seng, P., Zandotti, C., Dhiver, C., Ravaux, I., Tomei, C., Eldin, C., Tissot-Dupont, H., Honoré, S., Stein, A., Jacquier, A., Deharo, J. C., Chabrière, E., Levasseur, A., Fenollar, F., Rolain, J. M., Obadia, Y., Brouqui, P., Drancourt, M., La Scola, B., Parola, P. and Raoult, D. (2020) Early treatment of COVID-19 patients with hydroxychloroquine and azithromycin: A retrospective analysis of 1061 cases in Marseille, France. *Travel Medicine and Infectious Disease* **35**, 101738.

Ministério da Saúde. Acesse o Plano Nacional de Operacionalização da Vacina contra a Covid-19. Available at: https://www.gov.br/saude/pt-br (Cited: 11 November, 2020).

Mohhamad, D. (2020) Mohhamad D Egypt uses chloroquine in treating COVID-19 patients: minister. Egypt Today staff. Available at:https://www.egypttoday.com/Article/1/83104/Egypt-uses-chloroquine-in-treating-COVID-19-patients-Minister (Accessed: 11 November, 2020).

Moores, L. K., Tritschler, T., Brosnahan, S., Carrier, M., Collen, J. F., Doerschug, K., Holley, A. B., Jimenez, D., Le Gal, G., Rali, P. and Wells, P. (2020) Prevention, Diagnosis, and Treatment of VTE in Patients With Coronavirus Disease 2019: CHEST Guideline and Expert Panel Report. *Chest* **158**, 1143-1163.

Mussa, K. (2020) Morocco continues the use of Chloroquine despite controversy. The North Africa Post. Available at: https://northafricapost.com/41247-morocco-continues-use-of-chloroquine-despite-controversy.html (Accessed: 11 November, 2020).

National Institutes of Health. (2020a) NIH begins clinical trial of hydroxychloroquine and azithromycin to treat COVID-19. National Institutes of Health, Available at: https://www.nih.gov/news-events/news-releases/nih-begins-clinical-trial-hydroxychloroquine-azithromycin-treat-covid-19 (Accessed: 03 July, 2020).

National Institutes of Health. (2020b) BULLETIN-NIH Clinical trial evaluating hydroxychloroquine and azithromycin for COVID-19 closes early. National Institutes of Health, Available at: https://www.niaid.nih.gov/news-events/bulletin-nih-clinical-trial-evaluating-hydroxychloroquine-and-azithromycin-covid-19 (Accessed: 03 July, 2020).

Nunez, A. C., Gutierrez, T., Cervantes, J. M. L. and Juarez, M. (2020). Therapeutic Efficacy of Ivermectin as an Adjuvant in the Treatment of Patients with COVID-19. International Journal of Innovative Science and Research Technology, 5(7), 211-215

Nussbaumer-Streit, B., Mayr, V., Dobrescu, A. I., Chapman, A., Persad, E., Klerings, I., Wagner, G., Siebert, U., Christof, C., Zachariah, C. and Gartlehner, G. (2020) Quarantine alone or in combination with other public health measures to control COVID-19: a rapid review. *Cochrane Database of Systematic Reviews* **4**, Cd013574.

Pacheco, G. (2020) Estos son los medicamentos que se prueban para combatir el covid-19. Available at: https://www.milenio.com/ciencia-y-salud/medicamentos-para-coronavirus-a-prueba-contra-el-covid-19 (Acessed: 11 November, 2020).

Palazzuoli, A., Ruberto, F., De Ferrari, G. M., Forleo, G., Secco, G. G., Ruocco, G. M., D'Ascenzo, F., Mojoli, F., Monticone, S., Paggi, A., Vicenzi, M., Corcione, S., Palazzo, A. G., Landolina, M., Taravelli, E., Tavazzi, G., Blasi, F., Mancone, M., Birtolo, L. I., Alessandri, F., Infusino, F., Pugliese, F., Fedele, F., De Rosa, F. G., Emmett, M., Schussler, J. M., McCullough, P. A. and Tecson, K. M. (2020) Inpatient Mortality According to Level of Respiratory Support Received for Severe Acute Respiratory Syndrome Coronavirus 2 (Coronavirus Dis-

ease 2019) Infection: A Prospective Multicenter Study. *Critical Care Explorations* **2**, e0220.

Pani, A., Lauriola, M., Romandini, A. and Scaglione, F. (2020) Macrolides and viral infections: focus on azithromycin in COVID-19 pathology. *International Journal of Antimicrobial Agents* **56**, 106053.

Pereira, M., Dantas Damascena, A., Galvão Azevedo, L. M., de Almeida Oliveira, T. and da Mota Santana, J. (2020) Vitamin D deficiency aggravates COVID-19: systematic review and meta-analysis. *Critical Reviews in Food Science and Nutrition*, 1-9.

Pilkington, V., Pepperrell, T. and Hill, A. (2020) A review of the safety of favipiravir - a potential treatment in the COVID-19 pandemic? *Journal of Virus Eradication* **6**, 45-51.

Pormohammad, A., Monych, N. K. and Turner, R. J. (2020) Zinc and SARS-CoV-2: A molecular modeling study of Zn interactions with RNA-dependent RNA-polymerase and 3C-like proteinase enzymes. *International Journal of Molecular Medicine*.

Price-Haywood, E. G., Burton, J., Fort, D. and Seoane, L. (2020) Hospitalization and Mortality among Black Patients and White Patients with Covid-19. *The New England Journal of Medicine* **382**, 2534-2543.

Prodromos, C. and Rumschlag, T. (2020) Hydroxychloroquine is effective, and consistently so when provided early, for COVID-19: a systematic review. *New Microbes and New Infections* **38**, 100776.

Prodromos, C. C., Rumschlag, T. and Perchyk, T. (2020) Hydroxychloroquine is protective to the heart, not harmful: a systematic review. *New Microbes and New Infections* **37**, 100747.

Rahman, M. A., Iqbal, S., Islam, M. A., Niaz, M. K., Hussain, T. and Siddiquee, T. (2020) Comparison of viral clearance between ivermectin with doxycycline and hydroxychloroquine with azithromycin in COVID-19 patients. Journal of Bangladesh College of Physicians and Surgeons 38, 5-9.

Rahman, M. T. and Idid, S. Z. (2020) Can Zn Be a Critical Element in COVID-19 Treatment? *Biological Trace Element Research*, 1-9.

Rajter, J. C., Sherman, M. S., Fatteh, N., Vogel, F., Sacks, J. and Rajter, J. J. (2020) Use of Ivermectin Is Associated With Lower Mortality in Hospitalized Patients With Coronavirus Disease 2019: The ICON Study. *Chest*.

Regeneron Pharmaceuticals, Inc. Fact sheet for health care providers emergency use authorization (eua) of casirivimab and imdevimab. In: Regeneron Pharmaceuticals, Inc. Available at: https://www.fda.gov/media/143892/download.

Rhodes, A., Evans, L. E., Alhazzani, W., Levy, M. M., Antonelli, M., Ferrer, R., Kumar, A., Sevransky, J. E., Sprung, C. L., Nunnally, M. E., Rochwerg, B., Rubenfeld, G. D., Angus, D. C., Annane, D., Beale, R. J., Bellinghan, G. J., Bernard, G. R., Chiche, J. D., Coopersmith, C., De Backer, D. P., French, C. J., Fujishima, S., Gerlach, H., Hidalgo, J. L., Hollenberg, S. M., Jones, A. E., Karnad, D. R., Kleinpell, R. M., Koh, Y., Lisboa, T. C., Machado, F. R., Marini, J. J., Marshall, J. C., Mazuski, J. E., McIntyre, L. A., McLean, A. S., Mehta, S., Moreno, R. P., Myburgh, J., Navalesi, P., Nishida, O., Osborn, T. M., Perner, A., Plunkett, C. M., Ranieri, M., Schorr, C. A., Seckel, M. A., Seymour, C. W., Shieh, L., Shukri, K. A., Simpson, S. Q., Singer, M., Thompson, B. T., Townsend, S. R., Van der Poll, T., Vincent, J. L., Wiersinga, W. J., Zimmerman, J. L. and Dellinger, R. P. (2017) Surviving Sepsis Campaign: International Guidelines for Management of Sepsis and Septic Shock: 2016. *Intensive Care Medicine* **43**, 304-377.

Risch, H. A. (2020) Early Outpatient Treatment of Symptomatic, High-Risk COVID-19 Patients That Should Be Ramped Up Immediately as Key to the Pandemic Crisis. *American Journal of Epidemiology* **189**, 1218-1226.

Rosenberg, E. S., Dufort, E. M., Udo, T., Wilberschied, L. A., Kumar, J., Tesoriero, J., Weinberg, P., Kirkwood, J., Muse, A., DeHovitz, J., Blog, D. S., Hutton, B., Holtgrave, D. R. and Zucker, H. A. (2020) Association of Treatment With Hydroxychloroquine or Azithromycin With In-Hospital Mortality in Patients With COVID-19 in New York State. *Journal of the American Medical Association* **323**, 2493-2502.

Ruocco, G., McCullough, P. A., Tecson, K. M., Mancone, M., De Ferrari, G. M., D'Ascenzo, F., De Rosa, F. G., Paggi, A., Forleo, G., Secco, G. G., Pistis, G., Monticone, S., Vicenzi, M., Rota, I., Blasi, F., Pugliese, F., Fedele, F. and Palazzuoli, A. (2020) Mortality Risk Assessment Using CHA(2)DS(2)-VASc Scores in Patients Hospitalized With Coronavirus Disease 2019 Infection. *The American Journal of Cardiology* **137**, 111-117.

Santos-Sánchez, N. F. and Salas-Coronado, R. (2020) Origin, structural characteristics, prevention measures, diagnosis and potential drugs to prevent and COVID-19. *Medwave* **20**, e8037.

Schrezenmeier, E. and Dörner, T. (2020) Mechanisms of action of hydroxychloroquine and chloroquine: implications for rheumatology. *Nature Reviews Rheumatology* **16**, 155-166.

Schmith, V. D., Zhou, J. J. and Lohmer, L. R. L. (2020) The approved dose of ivermectin alone is not the ideal dose for the treatment of COVID-19. *Clinical Pharmacology & Therapeutics* **108**, 762-765.

Sharma, P., Reddy, P. K. and Kumar, B. (2020) Trace Element Zinc, a Nature's Gift to Fight Unprecedented Global Pandemic COVID-19. *Biol Trace Elem Res*, 1-9.

Sheng, W. H. (2020) Interim Guidelines for Clinical Management of SARS-CoV-2 Infection (5th edition). Available at: https://fightcovid.edu.tw/cdc-guidelines/clinical-management (Acessede: 11 November, 2020).

Shojaei, A. and Salari, P. (2020) COVID-19 and off label use of drugs: an ethical viewpoint. *Daru* **28**, 789-793.

Singh, A. K., Majumdar, S., Singh, R. and Misra, A. (2020) Role of corticosteroid in the management of COVID-19: A systemic review and a Clinician's perspective. *Diabetes and Metabolic Syndrome* **14**, 971-978.

Singhania, N., Bansal, S., Nimmatoori, D. P., Ejaz, A. A., McCullough, P. A. and Singhania, G. (2020) Current Overview on Hypercoagulability in COVID-19. American Journal of Cardiovascular Drugs **20**, 393-403.

Sodhi, M. and Etminan, M. (2020) Therapeutic Potential for Tetracyclines in the Treatment of COVID-19. *Pharmacotherapy* **40**, 487-488.

Sterne, J. A. C., Murthy, S., Diaz, J. V., Slutsky, A. S., Villar, J., Angus, D. C., Annane, D., Azevedo, L. C. P., Berwanger, O., Cavalcanti, A. B., Dequin, P. F., Du, B., Emberson, J., Fisher, D., Giraudeau, B., Gordon, A. C., Granholm, A., Green, C., Haynes, R., Heming, N., Higgins, J. P. T., Horby, P., Jüni, P., Landray, M. J., Le Gouge, A., Leclerc, M., Lim, W. S., Machado, F. R., McArthur, C., Meziani, F., Møller, M. H., Perner, A., Petersen, M. W., Savovic, J., Tomazini, B., Veiga, V. C., Webb, S. and Marshall, J. C. (2020) Association Between Administration of Systemic Corticosteroids and Mortality Among Critically Ill Patients With COVID-19: A Meta-analysis. *Journal of the American Medical Association* **324**, 1330-1341.

Szente Fonseca, S. N., de Queiroz Sousa, A., Wolkoff, A. G., Moreira, M. S., Pinto, B. C., Valente Takeda, C. F., Rebouças, E., Vasconcellos Abdon, A. P., Nascimento, A. L. A. and Risch, H. A. (2020) Risk of hospitalization for Covid-19 outpatients treated with various drug regimens in Brazil: Comparative analysis. *Travel Medicine and Infectious Disease* **38**, 101906.

Tang, N., Bai, H., Chen, X., Gong, J., Li, D. and Sun, Z. (2020) Anticoagulant treatment is associated with decreased mortality in severe coronavirus disease 2019 patients with coagulopathy. *Journal of Thrombosis and Haemostasis* **18**, 1094-1099.

te Velthuis, A. J., van den Worm, S. H., Sims, A. C., Baric, R. S., Snijder, E. J. and van Hemert, M. J. (2010) Zn(2+) inhibits coronavirus and arterivirus RNA polymerase activity in vitro and zinc ionophores block the replication of these viruses in cell culture. *PLoS Pathogens* **6**, e1001176.

The Independent. (2020) Museveni P Uganda records good results in treating COVID with hydroxychloroquine, chloroquine. Available at https://www.independent.co.ug/uganda-records-good-results-treating-COVID-with-hydroxychloroquine-chloroquine/ (Accessed: 19 August, 2020).

Trial Site News. Ivermectin usage accelerates while the need for data is real: how about an ivermectin registry? Trial Site News. Available at: https://www.trialsitenews.com/ivermectin-usage-accelerates-while-the-need-for-data-is-real-how-about-an-ivermectin-registry/ (Cited: 11 November, 2020).

Turshudzhyan, A. (2020) Anticoagulation Options for Coronavirus Disease 2019 (COVID-19)-Induced Coagulopathy. *Cureus* **12**, e8150.

Vaduganathan, M., van Meijgaard, J., Mehra, M. R., Joseph, J., O'Donnell, C. J. and Warraich, H. J. (2020) Prescription Fill Patterns for Commonly Used Drugs During the COVID-19 Pandemic in the United States. *Journal of the American Medical Association* **323**, 2524-2526.

Vahidy, F. S., Drews, A. L., Masud, F. N., Schwartz, R. L., Askary, B. B., Boom, M. L. and Phillips, R. A. (2020) Characteristics and Outcomes of COVID-19 Patients During Initial Peak and Resurgence in the Houston Metropolitan Area. *Journal of the American Medical Association* **324**, 998-1000.

Vora, A., Arora, V. K., Behera, D. and Tripathy, S. K. (2020) White paper on Ivermectin as a potential therapy for COVID-19. *Indian J Tuberc* **67**, 448-451.

Westafer, L. M., Elia, T., Medarametla, V. and Lagu, T. (2020) A Transdisciplinary COVID-19 Early Respiratory Intervention Protocol: An Implementation Story. *Journal of Hospital Medicine* **15**, 372-374.

World Health Organisation (WHO). (2020) COVID-19 Studies from the World Health Organization Database. Available at: https://clinicaltrials.gov/ct2/who_table.

World Health Organization. (2020) R&D blueprint and COVID-19. Available at: https://www.who.int/blueprint/priority-diseases/key-action/novel-coronavirus/en/ (Accessed: 25 March, 2020).

Xiao, J., Shiu, E. Y. C., Gao, H., Wong, J. Y., Fong, M. W., Ryu, S. and Cowling, B. J. (2020) Nonpharmaceutical Measures for Pandemic Influenza in Nonhealthcare Settings-Personal Protective and Environmental Measures. *Emerging Infectious Diseases* **26**, 967-975.

Xu, X. K., Liu, X. F., Wu, Y., Ali, S. T., Du, Z., Bosetti, P., Lau, E. H. Y., Cowling, B. J. and Wang, L. (2020) Reconstruction of Transmission Pairs for novel Coronavirus Disease 2019 (COVID-19) in mainland China: Estimation of Super-spreading Events, Serial Interval, and Hazard of Infection. *Clinical Infectious Diseases*.

Yamakawa, M., Kuno, T., Mikami, T., Takagi, H. and Gronseth, G. (2020) Clinical Characteristics of Stroke with COVID-19: A Systematic Review and Meta-Analysis. *Journal of Stroke & Cerebrovascular Diseases* **29**, 105288.

Yang, B. Y., Barnard, L. M., Emert, J. M., Drucker, C., Schwarcz, L., Counts, C. R., Murphy, D. L., Guan, S., Kume, K., Rodriquez, K., Jacinto, T., May, S., Sayre, M. R., Seattle Fire Department, Seattle, Washington and Rea, T. (2020) Clinical characteristics of patients with coronavirus disease 2019 (COVID-19) receiving emergency medical services in King County, Washington. Jama Network Open 3, e2014549.

Zhang, J., McCullough, P. A. and Tecson, K. M. (2020a) Vitamin D deficiency in association with endothelial dysfunction: Implications for patients with COVID-19. *Reviews in Cardiovascular Medicine* **21**, 339-344.

Zhang, J., Tecson, K. M. and McCullough, P. A. (2020b) Endothelial dysfunction contributes to COVID-19-associated vascular inflammation and coagulopathy. *Reviews in Cardiovascular Medicine* **21**, 315-319.

I-MASK+

PREVENTION & EARLY OUTPATIENT TREATMENT PROTOCOL FOR COVID-19

PREVENTION PROTOCOL

Ivermectin[1]	**Chronic Prevention** 0.2 mg/kg per dose (take with or after a meal) — twice a week for as long as disease risk is elevated in your community **Post COVID-19 Exposure Prevention**[2] 0.4 mg/kg per dose (take with or after a meal) — one dose today, repeat after 48 hours
Vitamin D3	1,000–3,000 IU/day
Vitamin C	500–1,000 mg twice a day
Quercetin	250 mg/day
Zinc	30–40 mg/day (elemental zinc)
Melatonin	6 mg before bedtime (causes drowsiness)
Gargle mouthwash	2 x daily – gargle (do not swallow) antiseptic mouthwash with cetylpyridinium chloride (e.g. Scope™, Act™, Crest™), Listerine™ with essential oils, or povidone/iodine 1% solution as alternative.

EARLY OUTPATIENT PROTOCOL[3]

Ivermectin[1]	0.4–0.6 mg/kg per dose (take with or after a meal) — one dose daily, take for 5 days or until recovered Use upper dose range if: 1) in regions with aggressive variants (e.g. "Delta" variant); 2) treatment started on or after day 5 of symptoms or in pulmonary phase; or 3) multiple comorbidities/risk factors.
Fluvoxamine[4]	50 mg twice daily for 10–14 days Add to ivermectin if: 1) minimal response after 2 days of ivermectin; 2) in regions with more aggressive variants; 3) treatment started on or after day 5 of symptoms or in pulmonary phase; or 4) numerous comorbidities/risk factors. Avoid if patient is already on an SSRI.
Nasal/oral rinse	3 x daily – gargle (do not swallow) antiseptic mouthwash with cetylpyridinium chloride (e.g. Scope™, Act™, Crest™), Listerine™ with essential oils, or povidone/iodine 1% solution as alternative. Nasal rinse instructions below.[5]
Vitamin D3	4,000 IU/day
Vitamin C	500–1,000 mg twice a day
Quercetin	250 mg twice a day
Zinc	100 mg/day (elemental zinc)
Melatonin	10 mg before bedtime (causes drowsiness)
Aspirin	325 mg/day (unless contraindicated)
Pulse Oximeter	Monitoring of oxygen saturation is recommended (for instructions see page 2)

[1] The dosing may be updated as further scientific studies emerge. The safety of ivermectin in pregnancy has not been definitively established. Use in the 1st trimester should be discussed with your doctor.

[2] To use if a household member is COVID-19 positive, or you have prolonged exposure to a COVID-19 positive patient without wearing a mask

[3] For late phase — hospitalized patients — see the FLCCC's MATH+ Hospital Treatment Protocol for COVID-19 on www.flccc.net

[4] Some individuals who are prescribed fluvoxamine experience acute anxiety which needs to be carefully monitored for and treated by the prescribing clinician to prevent rare escalation to suicidal or violent behavior.

[5] Nasal rinse – 3 x daily. Use 10% povidone/iodine wound wash. Take 1 ml (1/4 tsp) mix with 9 ml saline solution (2 tsp). Use nasal irrigation bottle or syringe.

Please regard our **disclaimer** and further information on page 2 of this document.

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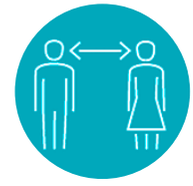
Behavioral Prevention

WEAR MASKS

Wear a cloth, surgical, or N95 mask when in confined, poorly ventilated, crowded indoor spaces with non-household members.



KEEP DISTANCE

Until the end of the COVID-19 crisis, we recommend keeping a minimum distance of approx. 2 m / 6 feet in public from people who are not from your own household.

WASH HANDS

We recommend, after a stay during and after outings from home (shopping, subway etc.), a thorough hand cleaning (20–30 sec. with soap), or also to use a hand disinfectant in between.

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I-MASK+
PREVENTION & EARLY OUTPATIENT TREATMENT PROTOCOL FOR COVID-19

IVERMECTIN

Summary of the Clinical Trials Evidence for Ivermectin in COVID-19

Ivermectin, an anti-parasitic medicine whose discovery won the Nobel Prize in 2015, has proven, highly potent, anti-viral and anti-inflammatory properties in laboratory studies. In the past 4 months, numerous, controlled clinical trials from multiple centers and countries worldwide are reporting consistent, large improvements in COVID-19 patient outcomes when treated with ivermectin.

Our comprehensive scientific review of these referenced trials on ivermectin can be found on www.flccc.net/flccc-ivermectin-in-the-prophylaxis-and-treatment-of-covid-19/

For a quick overview, a One-page Summary of our review on ivermectin can be found on www.flccc.net/flccc-ivermectin-summary

Body weight conversion (kg/lb) for ivermectin dose in prevention and treatment of COVID-19

Body weight **Conversion (1 kg ≈ 2.2 lbs)** (doses calculated per upper end of weight range)		**Dose** **0.2 mg/kg ≈ 0.09 mg/lb** (Each tablet = 3 mg; doses rounded to nearest half tablet above)	
70–90 lb	32–40 kg	8 mg	(3 tablets = 9 mg)
91–110 lb	41–50 kg	10 mg	(3.5 tablets)
111–130 lb	51–59 kg	12 mg	(4 tablets)
131–150 lb	60–68 kg	13.5 mg	(4.5 tablets)
151–170 lb	69–77 kg	15 mg	(5 tablets)
171–190 lb	78–86 kg	16 mg	(5.5 tablets)
191–210 lb	87–95 kg	18 mg	(6 tablets)
211–230 lb	96–104 kg	20 mg	(7 tablets = 21 mg)
231–250 lb	105–113 kg	22 mg	(7.5 tablets=22.5 mg)
251–270 lb	114–122 kg	24 mg	(8 tablets)
271–290 lb	123–131 kg	26 mg	(9 tablets = 27 mg)
291–310 lb	132–140 kg	28 mg	(9.5 tablets=28.5 mg)

Pulse Oximeter (usage instructions)

In symptomatic patients, monitoring with home pulse oximetry is recommended (due to asymptomatic hypoxia). The limitations of home pulse oximeters should be recognized, and validated devices are preferred. Multiple readings should be taken over the course of the day, and a downward trend should be regarded as ominous. Baseline or ambulatory desaturation < 94% should prompt hospital admission. The following guidance is suggested:

- Use the index or middle finger; avoid the toes or ear lobe.
- Only accept values associated with a strong pulse signal.
- Observe readings for 30–60 seconds to identify the most common value.
- Remove nail polish from the finger on which measurements are made.
- Warm cold extremities prior to measurement.

DISCLAIMER

*The **I-Mask+ Prevention & Early Outpatient Treatment Protocol for COVID-19** and the **MATH+ Hospital Treatment Protocol for COVID-19** are solely for educational purposes regarding potentially beneficial therapies for COVID-19. Never disregard professional medical advice because of something you have read on our website and releases. It is not intended to be a substitute for professional medical advice, diagnosis, or treatment in regards to any patient. Treatment for an individual patient should rely on the judgement of your physician or other qualified health provider. Always seek their advice with any questions you may have regarding your health or medical condition.*

For an overview of the developments in prevention and treatment of COVID-19, please visit flccc.net/covid-19-protocols

Please check our homepage regularly for updates of our COVID-19 Protocols. New medications may be added and/or dose changes to existing medications may be made as further scientific studies emerge!

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Covid-19 Treatment Protocol

Dr. Vladimir Zelenko

Fundamental Principles

Treat patients based on clinical suspicion as soon as possible, preferably within the first 5 days of symptoms. Perform PCR testing, but do not withhold treatment pending results.

Risk Stratify Patients

Low risk patient - Younger than 45, no comorbidities, and clinically stable **High risk patient** - Older than 45, younger than 45 with comorbidities, or clinically unstable

Treatment Options

Low risk patients

Supportive care with fluids, fever control, and rest Elemental Zinc 50mg 1 time a day for 7 days Vitamin C 1000mg 1 time a day for 7 days Vitamin D3 5000iu 1 time a day for 7 days

Optional over the counter options

Quercetin 500mg 2 times a day for 7 days **or** Epigallocatechin-gallate (EGCG) 400mg 1 time a day for 7 days

Moderate / High risk patients

Elemental Zinc 50-100mg once a day for 7 days Vitamin C 1000mg 1 time a day for 7 days Vitamin D3 10000iu once a day for 7 days or 50000iu once a day for 1-2 days Azithromycin 500mg 1 time a day for 5 days **or** Doxycycline 100mg 2 times a day for 7 days **Hydroxychloroquine (HCQ) 200mg 2 times a day for 5-7 days** and/or **Ivermectin 0.4-0.5mg/kg/day for 5-7 days** Either or both HCQ and IVM can be used, and if one only, the second agent may be added after about 2 days of treatment if obvious recovery has not yet been observed etc.

Other treatment options

Dexamethasone 6-12mg 1 time a day for 7 days **or** Prednisone 20mg twice a day for 7 days, taper as needed Budesonide 1mg/2cc solution via nebulizer twice a day for 7 days Blood thinners (i.e. Lovenox, Eliquis, Xarelto, Pradaxa, Aspirin) Colchicine 0.6mg 2-3 times a day for 5-7 days Monoclonal antibodies Home IV fluids and oxygen

TRY TO KEEP PATIENTS OUT OF THE HOSPITAL

1.https://www.sciencedirect.com/science/article/pii/S0924857920304258
2.https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7365891/ 3.https://pubs.acs.org/doi/10.1021/jf5014633
4.https://vdmeta.com/ 5.https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7318306/
6.https://pubs.acs.org/doi/10.1021/jf5014633 7.https://www.sciencedirect.com/science/article/pii/S0924857920304258
8.https://ivmmeta.com/ 9.https://www.nejm.org/doi/full/10.1056/NEJMoa2021436
10.https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7392554/
11.https://www.medrxiv.org/content/10.1101/2021.01.26.21250494v1

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I-MASS

Prevention & At Home Treatment Mass Distribution Protocol for COVID-19

Prevention Protocol

For adults > 18 years and >40 kg/90 lbs

Ivermectin	18 mg – start treatment with one dose on day 1, and then repeat weekly (every 7 days)
Vitamin D3	2000 IU (50 mcg) daily
Multivitamin	1 tablet daily
Digital thermometer	optional (to watch the body temperature)

Early At Home Treatment Protocol

For adults > 18 years and >40 kg/90 lbs

Ivermectin	24 mg – daily for 5 days In the setting of poor clinical response, advanced disease, or obesity, higher doses should be used (target 0.4–0.6 mg/kg)
Melatonin	6 mg at night for 5 days
Aspirin (ASA)	80 mg/day (unless contraindicated)
Anti-septic mouth wash	Three times daily (gargle do not swallow); if available

Post-exposure Prevention

For household or close contacts of a COVID-19 patient

Ivermectin	18 mg – repeat dose in 48 hours

A cooperation of the FLCCC Alliance with

BIRD British *Ivermectin* Recommendation Development

www.bird-group.org

The I-MASS protocol has been developed for Mass Distribution during regional outbreaks or in resource poor countries to lessen the impact and spread of COVID-19.

Ivermectin

Ivermectin has been found to have highly potent anti-viral and anti-inflammatory properties and many randomized trials and data from countries that have adopted ivermectin all show large reductions in time to recovery, hospitalizations and death. The FLCCC review paper summarizing this data has been published in the *American Journal of Therapeutics* here.

Further supportive information can also be found here: www.flccc.net/ivermectin-in-covid-19/

Disclaimer: The safety of ivermectin in pregnancy has not been established. Particularly the use in the 1st trimester should be discussed with your doctor beforehand.

Further treatment protocols for COVID-19, including for hospitalized patients, can be found at flccc.net/covid-19-protocols/

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The Fleming [FMTVDM] Directed CoVid-19 Treatment Protocol (FMTVDM).

Begins with Stabilizing the Immune Response & Opening Airways to Improve Oxygenation.

- Immune Support:
  - Folate (B9) 3 mg by mouth daily,
  - Magnesium 400 mg by mouth daily,
  - Calcium Carbonate 400 mg by mouth daily,
  - Cobalamin (B12) 3 mg by mouth daily,
  - Pyridoxine (B6) 30 mg by mouth daily,
  - Dehydroepiandrosterone (DHEA) 50 mg by mouth twice daily,
  - Ascorbic acid (C) 2000 mg by mouth daily,
  - Zinc 10 mg by mouth daily, and
  - 1,25-dihydroxycholecalciferol (D3) 1500 IU by mouth daily.
- Respiratory Support:
  - Atrovent Nebulizer Treatment or Inhaler ii puffs every 4-hours.

Third Component of Treatment Includes Aminoquinolines & Antibiotics in the Outpatient Setting.

- Aminoquinolines and Antibiotics that reduce viral attachment to cells & reduce viral replication - not to reduce potential for secondary bacterial infection. Slides 14 & 14.
- (1) 100% Effective
  - Primaquine 200 mg by mouth on day 1.
  - Clindamycin 150 mg by mouth every 6-hours for 7-days.
  - Hydroxychloroquine 200 mg by mouth every 8-hours for 10-days.
- (2) 97.9% Effective
  - Hydroxychloroquine 200 mg by mouth every 8-hours for 10-days.
  - Clindamycin 150 mg by mouth every 6-hours for 7-days.
- (3) 74.2% Effective
  - Hydroxychloroquine 200 mg by mouth every 8-hours for 10-days.
  - Azithromycin 500 mg by mouth on day 1, then 250 mg by mouth on days 2 through 5.
- (4) 69.1% Effective
  - Hydroxychloroquine 200 mg by mouth every 8-hours for 10-days.
  - Doxycycline 100 mg by mouth every 12-hours for 10-days.

SARS-CoV-2 Etiology & Treatment

Or These Treatments for Hospitalized Patients.

- The Three Different Regimens:
  - (1) With prior Aminoquinoline Treatment begin
    - Methylprednisolone 125 mg IV every 6-hours for 3 days;
      - then 125 mg IV every 12-hours for 2 days;
      - then 125 mg IV daily for 2 days;
      - then 60 mg IV daily for 2 days [with each infusion given over 30-minutes];
      - then Solumedrol dose pack to taper off steroids).
  - (2) With prior Aminoquinoline Treatment begin
    - Tocilizumab 8-mg/kg [IBW; not to exceed 800 mg] not to exceed 800 mg intravenously infused over 1-hour.
      - May be repeated every 8-hours for a maximum of 4-doses; and
    - Interferon α-2β (5-million units per nebulizer every 12-hours for 7-days).
  - (3) If no prior Aminoquinoline Treatment has been provided begin
    - Primaquine 200 mg by mouth day 1;
    - Clindamycin 150 mg by mouth every 6-hours for 7-days; and
    - Tocilizumab and Interferon-α2β - using the same doses shown in (2) above.

CHEST

Use of Ivermectin Is Associated With Lower Mortality in Hospitalized Patients With Coronavirus Disease 2019

The Ivermectin in COVID Nineteen Study

Juliana Cepelowicz Rajter, MD; Michael S. Sherman, MD, FCCP; Naaz Fatteh, MD; Fabio Vogel, PharmD, BCPS; Jamie Sacks, PharmD; and Jean-Jacques Rajter, MD

BACKGROUND: Ivermectin was shown to inhibit severe acute respiratory syndrome coronavirus 2 replication in vitro, which has led to off-label use, but clinical efficacy has not been described previously.

RESEARCH QUESTION: Does ivermectin benefit hospitalized coronavirus disease 2019 (COVID-19) patients?

STUDY DESIGN AND METHODS: Charts of consecutive patients hospitalized at four Broward Health hospitals in Florida with confirmed COVID-19 between March 15 and May 11, 2020, treated with or without ivermectin were reviewed. Hospital ivermectin dosing guidelines were provided, but treatment decisions were at the treating physician's discretion. The primary outcome was all-cause in-hospital mortality. Secondary outcomes included mortality in patients with severe pulmonary involvement, extubation rates for mechanically ventilated patients, and length of stay. Severe pulmonary involvement was defined as need for $F_{IO_2} \geq 50\%$, noninvasive ventilation, or invasive ventilation at study entry. Logistic regression and propensity score matching were used to adjust for confounders.

RESULTS: Two hundred eighty patients, 173 treated with ivermectin and 107 without ivermectin, were reviewed. Most patients in both groups also received hydroxychloroquine, azithromycin, or both. Univariate analysis showed lower mortality in the ivermectin group (15.0% vs 25.2%; OR, 0.52; 95% CI, 0.29-0.96; $P = .03$). Mortality also was lower among ivermectin-treated patients with severe pulmonary involvement (38.8% vs 80.7%; OR, 0.15; 95% CI, 0.05-0.47; $P = .001$). No significant differences were found in extubation rates (36.1% vs 15.4%; OR, 3.11; 95% CI, 0.88-11.00; $P = .07$) or length of stay. After multivariate adjustment for confounders and mortality risks, the mortality difference remained significant (OR, 0.27; 95% CI, 0.09-0.80; $P = .03$). One hundred ninety-six patients were included in the propensity-matched cohort. Mortality was significantly lower in the ivermectin group (13.3% vs 24.5%; OR, 0.47; 95% CI, 0.22-0.99; $P < .05$), an 11.2% (95% CI, 0.38%-22.1%) absolute risk reduction, with a number needed to treat of 8.9 (95% CI, 4.5-263).

INTERPRETATION: Ivermectin treatment was associated with lower mortality during treatment of COVID-19, especially in patients with severe pulmonary involvement. Randomized controlled trials are needed to confirm these findings. CHEST 2021; 159(1):85-92

KEY WORDS: hospitalized COVID-19; in-hospital mortality; ivermectin; mechanical ventilation; number needed to treat; severe pulmonary involvement; survival

ABBREVIATIONS: COVID-19 = coronavirus disease 2019; IQR = interquartile range; MAP = mean arteria pressure; QTc = corrected QT interval; SARS-CoV-2 = severe acute respiratory syndrome coronavirus 2

AFFILIATIONS: From the Broward Health Medical Center, Fort Lauderdale, FL (J. C. R., N. F., F. V., J. S., and J.-J. R.); the Drexel University College of Medicine (M. S. S.),

Take-home Points

Study Question: Is ivermectin associated with lower mortality rate in patients hospitalized with coronavirus disease 2019 (COVID-19)?

Results: A retrospective cohort study of consecutive patients hospitalized with confirmed severe acute respiratory syndrome coronavirus 2 infection at a four-hospital consortium in South Florida. Analysis showed statistically significant lower mortality rates in the group treated with ivermectin as compared with the group treated with usual care (15.0% vs 25.2%).

Interpretation: Ivermectin was associated with lower mortality during treatment of COVID-19 patients, especially in patients who required higher inspired oxygen or ventilatory support.

Ivermectin previously was studied as a therapeutic option for viral infections, with data showing some in vitro activity against a broad range of viruses, including HIV, dengue, influenza, and Zika virus, likely through inhibition of importin α/β1-mediated nuclear import of viral proteins.[1-3] Wagstaff et al[4] demonstrated that ivermectin was a potent in vitro inhibitor of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), showing a 99.8% reduction in viral RNA after 48 h. Reports can be found on the Internet of physicians worldwide treating Coronavirus disease 2019 (COVID-19) empirically with ivermectin since late April 2020. According to ClinicalTrials.gov, currently 37 studies are investigating the usefulness of ivermectin in COVID-19. However, in vivo efficacy of ivermectin in SARS-CoV-2 infection in humans has not been reported previously.

In the late 1970s, ivermectin was developed as a new class of drug to treat parasitic infections. Initially used in veterinary medicine, it soon was found to be safe and effective in humans. It has been used successfully to treat onchocerciasis and lymphatic filariasis in millions of people worldwide as part of a global drug donation program. About 3.7 billion doses of ivermectin have been distributed in mass drug administration campaigns globally over the past 30 years. Presently, ivermectin is approved for use in humans in several countries to treat onchocerciasis, lymphatic filariasis, strongyloidiasis, and scabies.[1]

Based on the data drug safety sheet for ivermectin (New Drug Application Identifier: 50-742/S-022), side effects were uncommon and limited. Reported side effects with more than 1% occurrence included elevation in alanine aminotransferase and aspartate aminotransferase (2%), nausea (2%), diarrhea (2%), decreased leukocyte count (3%), peripheral edema (3%), tachycardia (3%), dizziness (3%), and pruritus (3%). A pharmacokinetic study of 166 patients reported side effects of headache (6%), dysmenorrhea (5.5%), upper respiratory infection symptoms (1.8%), and diarrhea (1.8%).[5]

Methods

Patients

Sequentially consecutive hospitalized patients at four Broward Health-associated hospitals in South Florida with laboratory-confirmed infection with SARS-CoV-2 during their admission were reviewed in this study. The list of confirmed cases was provided by the hospitals' epidemiology departments. Enrollment dates ranged from March 15, 2020, through May 11, 2020. Confirmatory testing was performed by nasopharyngeal swab using a Food and Drug Administration Emergency Use Authorized COVID-19 molecular assay for the detection of SARS-CoV-2 RNA. Patients younger than 18 years and those who were pregnant or incarcerated were excluded from data collection based on institutional review board requirements. Patients who had at least two separate admissions placing them in both groups also were excluded.

Study Procedures

Records were abstracted by four of the authors (J. C. R., N. F., J. S., and J.-J. R.), and all data were reviewed subsequently and confirmed by the lead author. Baseline data were collected at the time of ivermectin administration for the ivermectin group; for the usual care group, baseline was either the time of administration of hydroxychloroquine or, if not used, at the time of admission. Information collected included COVID-19 testing results, patient demographics, pre-existing comorbid conditions, initial vital signs, laboratory results, and the use of corticosteroids, hydroxychloroquine, and azithromycin to describe the cohort and to identify potential confounders between groups. Severity of pulmonary involvement was assessed at the time of baseline data collection and was categorized

Philadelphia, PA; and the Florida International University (J.-J. R.), Miami, FL.

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as severe or nonsevere. Patients were considered to have severe pulmonary involvement if they required an F_{IO_2} of 50% or more, high-flow nasal oxygen, noninvasive ventilation, or intubation and mechanical ventilation. The nonsevere pulmonary criteria encompassed patients who required no supplemental oxygen or low F_{IO_2} (ie, venturi mask 40% or less or up to 6 L/min of low-flow nasal cannula), independent of laboratory findings.

Patients were categorized into two treatment groups based on whether they received ivermectin at any time during the hospitalization. Patients in the ivermectin group received at least one oral dose of ivermectin at 200 μg/kg in addition to usual clinical care. A second dose could be given at the discretion of the treating physician at day 7 of treatment. Ivermectin is not currently approved by the Food and Drug Administration for COVID-19 treatment. The decision to prescribe ivermectin, hydroxychloroquine, azithromycin, or other medications was at the discretion of the treating physicians; however, hospital guidelines were established for the safe use and dosing of these agents. These guidelines included a baseline ECG and mandatory cardiac and corrected QT interval (QTc) monitoring for patients receiving hydroxychloroquine (alone or in combination with azithromycin), avoidance of azithromycin if patient's baseline QTc was more than 460 msec, and discontinuation of hydroxychloroquine if a concerning elevation in QTc occurred or if the patient's cardiologist recommended discontinuation. Oxygen and ventilatory support were applied per the customary care. Empiric use of ivermectin was given explicitly for COVID-19.

Outcomes

The primary outcome was all-cause in-hospital mortality. A patient was considered a survivor if he or she left the hospital alive or if his or her status in the hospital changed from active care to awaiting transfer to a skilled facility. Two consecutive nasopharyngeal swab specimens showing negative results for SARS-CoV-2, collected $\geq$ 24 h apart, were necessary for a patient to be accepted to the local skilled nursing facilities.

Secondary outcomes included subgroup mortality of patients with severe pulmonary involvement, extubation rates for patients requiring mechanical ventilation, and length of hospital stay. Length of stay was calculated from day of admission to either the day of discharge or to patient death.

Statistical Analysis

Univariate analysis of the primary mortality outcome and comparisons between treatment groups were determined by the Student *t* test for parametric continuous variables or the Mann-Whitney *U* test for nonparametric continuous variables as appropriate, and by the Pearson χ^2 test for categorical variables. The method of Hodges-Lehman was used to estimate median differences with 95% CIs.

To adjust for confounders and between-group differences, a multivariate analysis was performed using stepwise binary logistic regression. Patient variables included in the analysis were age, sex, comorbidities of diabetes, chronic lung disease, cardiovascular disease, and hypertension, smoking status, severity of pulmonary involvement, need for mechanical ventilation at study entry, BMI, peripheral white blood count, absolute lymphocyte count, and use of corticosteroids based on bivariate associations within our data, a priori plausibility, and documented associations with mortality from previous studies. Adjusted ORs with 95% CIs were computed to show level of certainty. Analyses were based on nonmissing data, and missing data were not imputed. Missingness of 1% was found for peripheral WBC count, 5% for smoking status, and 7% for absolute lymphocyte count.

We performed a secondary analysis using propensity score matching to reduce the effects of confounding and the likelihood of selection bias. Propensity matching was performed using a nearest-neighbor algorithm with 1:1 matching without replacement and a caliper distance of less than 0.2. Variables for propensity scoring included those variables from the univariate between-groups analysis of the unmatched cohort that had a *P* value of less than .2 (age, sex, pulmonary condition, hypertension , HIV status, severe pulmonary presentation, and exposure to corticosteroids, hydroxychloroquine, or azithromycin). Race, WBC count, absolute lymphocyte count, and need for mechanical ventilation before or on the day of study entry also were added as potential clinical confounders.

All tests were two-sided and a P value $< .05$ was considered statistically significant. Statistical analyses were conducted using IBM SPSS version 26.0 software, R version 3.5.3 software (R Foundation for Statistical Computing), and SPSS PS-matching software (sourceforge.net).

This study was conducted in accordance with tenets of the amended Declaration of Helsinki. The protocol was approved by the institutional review board for the Broward Health Hospital System (Identifier: 2020-034-BHMC). The authors assume responsibility for the accuracy and completeness of the data and analyses, as well as for the fidelity of the study.

Results

Characteristics of the Patients

Three hundred seven patients were admitted for COVID-19 during the period studied. Four patients were not reviewed because of multiple admissions, 11 did not have COVID-19 confirmed at the time of the study, and 12 were excluded because their age was younger than 18 years, they were pregnant, or they were incarcerated. The remaining cohort of 280 patients comprised 173 treated with ivermectin and 107 in the usual care group. Most patients received a single dose of ivermectin; however, 13 patients received a second dose of ivermectin for ongoing signs or symptoms on day 7 of treatment. Follow-up data for all outcomes were available through May 19, 2020. No patients were lost to follow-up for the primary outcome. At the time of analysis, all patients in both groups had met the end point of death, discharge alive, or awaiting transfer to a skilled facility. Of those awaiting transfer, in the control group, one patient was awaiting transfer to hospice because of an unrelated terminal illness and one patient was awaiting negative COVID-19 test results to proceed with unrelated surgery. In the ivermectin group, five patients were in stable condition, awaiting transfer to skilled facility or rehabilitation, and one patient was improving clinically.

Baseline characteristics and between-group comparisons for unmatched and propensity-matched cohorts are shown in Table 1. Before matching, hypertension and

TABLE 1] Patient Characteristics by Treatment Group

Demographic Characteristic	Unmatched Cohort				Matched Cohort			
	Total (N = 280)	Usual Care (n = 107)	Ivermectin (n = 173)	*P* Value	Total (N = 196)	Usual Care (n = 98)	Ivermectin (n = 98)	*P* Value
Age, y	59.6 ± 17.9	58.6 ± 18.5	60.2 ± 17.6	.45	59.6 ± 17.5	59.04 ± 17.7	60.07 ± 17.4	.68
Female sex	127 (45.4)	43 (41.2)	84 (48.6)	.17	78 (39.8)	39 (39.8)	39 (39.8)	1.0
Race or ethnicity			.36				1.0	
Black	153 (54.6)	55 (51.4)	98 (56.6)		108 (55.1)	54 (55.1)	54 (55.1)	
White	76 (27.1)	35 (32.7)	41 (23.7)		55 (28.1)	27 (27.6)	28 (28.6)	
Hispanic	33 (11.7)	12 (11.2)	21 (12.1)		23 (11.7)	12 (12.5)	111 (11.2)	
Other or not identified[a]	13 (4.6)	5 (4.7)	13 (7.5)		10 (5.1)	5 (5.1)	5 (5.1)	
Current or former smoker	46/255 (18.0)	22/99 (22.3)	24/156 (15.6)	.40	31/180 (22.2)	20/90 (22.2)	11/90 (12.2)	.11
No. of comorbidities	1.66 ± 1.34	1.60 ± 1.46	1.70 ± 1.27	.57	1.56 ± 1.33	1.58 ± 1.43	1.53 ± 1.22	.79
Diabetes	90 ± 32.1	31 ± 29.0	59 ± 34.1	.37	59 ± 30.1	30 ± 30.6	29 ± 29.6	.88
Cardiac	43 ± 15.4	18 ± 16.8	25 ± 14.5	.59	27 ± 13.8	16 ± 16.3	11 ± 11.2	.30
Pulmonary	28 ± 10.0	14 ± 13.1	14 ± 8.9	.18	18 ± 10.1	10 ± 10.2	8 ± 8.2	.62
Obesity	114 ± 40.7	42 ± 39.3	72 ± 41.6	.70	79 ± 40.3	39 ± 39.8	40 ± 40.1	.88
Renal	24 ± 8.6	10 ± 9.4	14 ± 8.1	.72	16 ± 8.2	9 ± 9.2	7 ± 7.1	.60
Cancer	17 ± 6.1	8 ± 7.5	9 ± 5.2	.44	14 ± 7.1	7 ± 7.1	7 ± 7.1	1.00
Hypertension	50 ± 17.9	13 ± 12.2	37 ± 21.4	.05	26 ± 13.2	12 ± 12.2	14 ± 14.3	.67
Neurologic	28 ± 10.0	8 ± 7.5	20 ± 11.6	.27	17 ± 8.7	8 ± 8.2	9 ± 9.2	.80
HIV infection	9 ± 3.2	1 ± 1	8 ± 4.6	.09	3 ± 1.5	1 ± 1.0	2 ± 2.0	.56
Thyroid	23 ± 8.2	7 ± 6.6	16 ± 9.3	.42	15 ± 7.7	7 ± 7.1	8 ± 8.2	.79
BMI	30.0 ± 7.8	29.8 ± 7.2	30.1 ± 8.2	.81	29.4 ± 6.6	29.4 ± 6.3	29.4 ± 6.9	.95
Pulmonary severity				.46				
Severe	75 (26.8)	26 (24.3)	49 (28.3)	.12	47 (24.0)	22 (22.4)	25 (25.5)	.62
Intubated at study entry	38 (13.6)	15 (14.0)	23 (13.3)	.86	25 (12.8)	11 (11.2)	14 (14.3)	.52
Heart rate	86.0 (75.0-98.0)	86.0 (74.0-97.0)	86.0 (75.5-98.0)	.65	85.5 (74.0-98.0)	86.0 (73.0-97.5)	85.0 (74-98.0)	.88
MAP (mm Hg)	93 (82.3-103.0)	90 (81.0-103.0)	94 (83-103)	.24	92.5 (82.0-103.0)	91.0 (81.0-103.2)	93.0 (82.0-103.0)	.74
MAP ≤ 70 mm Hg	13/260 (5.0)	6/89 (6.7)	7/171 (4.1)	.35	7 (3.6)	4 (4.1)	3 (3.1)	.70
Corticosteroid	90 (32.1)	21 (19.6)	69 (39.8)	.001	46 (23.2)	21 (21.4)	25 (25.5)	.5
Hydroxychloroquine	260 (92.9)	104 (97.2)	156 (90.2)	.03	190 (96.9)	95 (96.9)	95 (96.9)	1.00
Azithromycin	243 (86.7)	99 (92.5)	144 (83.2)	.03	177 (90.3)	90 (91.8)	87 (88.7)	.47

(Continued)

TABLE 1] (Continued)

Demographic Characteristic	Unmatched Cohort				Matched Cohort			
	Total (N = 280)	Usual Care (n = 107)	Ivermectin (n = 173)	*P* Value	Total (N = 196)	Usual Care (n = 98)	Ivermectin (n = 98)	*P* Value
Peripheral WBC count ($\times 10^9$/L)	7.3 (5.6-10.2; n = 277)	7.0 (5.7-8.9; n = 106)	7.6 (5.5-11.1; n = 171)	.41	6.9 (5.3-9.3)	7.0 (5.8-9.0)	6.9 (5.2-9.8)	.69
Lymphocyte count ($\times 10^9$/L)	1.15 (0.78-1.56; n = 260)	1.14 (0.84-1.49; n = 102)	1.20 (0.77-1.67; n = 158)	.62	1.13 (0.77-1.52)	1.15 (0.87-1.45)	1.19 (0.75-1.57)	.88

Data are presented as No. (%), mean ± SD, or median (interquartile range), unless otherwise indicated. Current and former smoker is given as a proportion of the population with known smoking status documented in their medical records. MAP = mean arterial pressure.
[a]Asian, Native American, Pacific Islander, or not identified.

corticosteroid use were more prevalent in the ivermectin group, whereas the use of hydroxychloroquine and hydroxychloroquine plus azithromycin were higher in the usual care group.

Propensity score matching created a total of 98 matched pairs. After matching, no statistically significant differences were found between the two groups. Eight patients in the propensity-matched group received a second dose of ivermectin on day 7.

Outcomes

Unadjusted outcomes for the unmatched cohort and outcomes in the propensity-matched cohort are shown in Table 2. For the unmatched cohort, overall mortality was significantly lower in the ivermectin group than in the usual care group (15.0% vs 25.2% for ivermectin and usual care, respectively; $P = .03$). Mortality also was lower for ivermectin-treated patients in the subgroup of patients with severe pulmonary involvement (38.8% vs. 80.7% for ivermectin and usual care, respectively; $P = .001$). On univariate analysis, patients receiving corticosteroids showed a higher mortality than those who did not receive corticosteroids (30.0% vs 13.7%; OR, 2.7; 95% CI, 1.47-4.99; $P = .001$); however, corticosteroids were more likely to have been prescribed for severe patients (58.6% vs 22.4% for severe and nonsevere, respectively; OR, 4.91; 95% CI, 2.78-8.63; $P < .001$).

Results were similar, with lower mortality in the ivermectin-treated patients for the matched cohort for the group as a whole and for the subgroup with severe pulmonary involvement (Table 2). In the matched cohort, ivermectin was associated with an absolute risk reduction of 11.2% (95% CI, 0.38%-22.1%) and a corresponding number needed to treat of 8.9 (95% CI, 4.5-263) to prevent one death. We found no difference in median hospital length of stay or in extubation rates in either the unmatched or matched cohorts. Of note, 1 of the 13 patients who received a second dose of ivermectin died; this patient was not in the propensity-matched cohort.

Multivariate analysis was performed on the unmatched cohort, adjusting for demographic factors and between-group differences in mortality risks. Independent predictors of in-hospital mortality included treatment group, age, severe pulmonary disease category, and reduced lymphocyte count (Table 3). Because race was not a significant predictor after adjustment, a further analysis was performed that showed that White patients were significantly older than Black patients (mean age, 66.8 vs 59.1 y; mean difference, 7.7 y; 95% CI, 3.0-12.4 y;

TABLE 2] Univariate Clinical Outcomes by Treatment Group

Outcome	Unmatched Cohort				Matched Cohort			
	Control Subjects (n = 107)	Ivermectin (n = 173)	OR or Difference (95% CI)	*P* Value	Control Subjects (n = 98)	Ivermectin (n = 98)	OR or Difference (95% CI)	*P* Value
Mortality	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Total	27 (25.2)	26 (15.0)	0.52 (0.29-0.96)	0.03	24 (24.5)	13 (13.3)	0.47 (0.22-0.99)	0.045
Severe	21/26 (80.7)	19/49 (38.8)	0.15 (0.05-0.47)	0.001	18/22 (81.8)	8/25 (32.0)	0.27 (0.08-0.92)	0.002
Nonsevere	6/81 (7.4)	7/124 (5.6)	0.75 (0.24-2.3)	0.61	6/76(7.9)	4/74 (5.4)	0.97 (0.61-1.54)	0.78
Successful extubation	4/26 (15.4)	13/36 (36.1)	3.11 (0.88-11.00)	0.07	3/22 (15.4)	7/18 (38.9)	1.91 (0.43-8.46)	0.14
Length of stay	7.0 (4.0-10.0)	7.0 (4.0-13.3)	0 (-1 to 2)	0.34	7.0 (4.0-10.0)	7.0 (3.0-13.0)	0 (-2 to 1)	0.88

Data are presented as No./Total No. (%) or median (interquartile range) unless otherwise indicated.

$P = .001$) and that Hispanic patients (mean age, 49.8 y; mean difference, 17.0 y; 95% CI, 9.6-24.4 y; $P < .001$).

Discussion

In this multihospital retrospective cohort study, we observed a significant association of ivermectin with improved survival for patients admitted with COVID-19. This association also was seen in the subset of patients with severe pulmonary disease. These findings were confirmed after multivariate adjustment for comorbidities and differences between groups, and also in a propensity score-matched cohort. Similar to other studies, we noted that older age, cardiac disease, current or former smoking, more severe pulmonary involvement at presentation, higher WBC counts, and lower lymphocyte counts emerged as risk markers for in-hospital mortality.

The overall mortality, and mortality in intubated patients, in our usual care group was similar to what was reported in previous studies. Richardson et al[6] reported an overall mortality of 21% in a New York City cohort, with a mortality of 88% in intubated patients. Zhou et al[7] reported 28.2% mortality in a cohort of hospitalized patients in Wuhan, China; the intubated patients showed a mortality of 96.9%. In contrast to Magagnoli et al,[8] we did not see a higher mortality effect for hydroxychloroquine. This may have been because of the small number of patients who were not treated with this agent; thus, our study was underpowered to detect a difference in mortality from hydroxychloroquine treatment. We also hypothesize that precautionary measures in the hospitals' protocol for hydroxychloroquine use could have prevented fatal arrhythmias from developing. These included baseline electrocardiography and daily QTc monitoring by telemetry for any patient receiving hydroxychloroquine or combination therapy, avoidance of azithromycin if patient's baseline QTc was more than 460 msec, and discontinuation of hydroxychloroquine if a concerning elevation in QTc occurred or if the patient's cardiologist recommended discontinuation. In contrast to Horby et al,[9] we did not find a mortality benefit for patients who were prescribed corticosteroids in our multivariate analysis, which included several severity covariates. These findings are likely explainable by physicians' choice to reserve use of corticosteroids for the most seriously ill patients, because the study was performed before the results of the Randomised Evaluation of COVID-19 Therapy (RECOVERY) trial were published.[9]

TABLE 3] Multivariate Analysis of Factors Associated With Mortality

Variable	OR (95% CI)	*P* Value
Treatment group	. . .	. . .
Ivermectin	0.27 (0.09-0.80)	.03
Control subject	Reference	. . .
Age	1.05 (1.02-1.09)	.003
Sex	. . .	. . .
Female	0.42 (0.24-1.82)	.42
Male	Reference	. . .
Smoking status	. . .	. . .
Current or former smoker	3.49 (0.71-17.32)	.13
Nonsmoker	Reference	. . .
Race	. . .	.18
Black	0.64 (0.21-1.94)	.43
Hispanic	0.14 (0.02-1.22)	.08
Other	0.62 (0.05-7.92)	.71
White	Reference	. . .
Comorbidities	. . .	. . .
Diabetes	1.17 (0.39-3.55)	.78
Cardiac	1.51 (0.43-5.22)	.52
Pulmonary	0.15 (0.20-1.84)	.15
Hypertension	0.72 (0.17-3.08)	.66
No comorbidities	Reference	. . .
BMI	0.97 (0.89-1.07)	.58
Severe presentation	11.41 (3.42-38.09)	< .001
Intubated at study entry	2.96 (0.73-12.06)	.13
MAP ≤ 70 mm Hg	1.82 (0.17-19.1)	.62
Corticosteroid treatment	1.71 (0.57-5.16)	.34
Peripheral WBC count	1.08 (0.96-1.23)	.22
Lymphocyte count	3.65 (1.25-10.60)	.02

MAP = mean arterial pressure.

We also did not confirm a higher risk of mortality in Black patients in comparison with White patients after controlling for age. Prior reports showed lower survival rates among Black and Hispanic patients[10]; however, Price et al[11] also found no racial differences in mortality. In our hospital population, White patients were significantly older, which is reflective of our catchment area and may be responsible for the discrepancy.

We did not observe a significant difference in hospital length of stay between the groups (median, 7 days for both groups) despite the lower mortality. Possible explanation could include delay in discharging patients to other facilities (skilled nursing facilities, inpatient rehabs, and so forth) because of a delay in obtaining required repeat COVID-19 testing results. Patients who died were included in length-of-stay measurements.

Use of mechanical ventilation was not adopted as an outcome of interest, because guidelines and practice patterns for intubation criteria changed throughout the length of the study. We were unable to determine ICU length of stay and ventilatory-free days in the ICU because overflow conditions during the pandemic placed critically ill patients in the emergency room and other non-ICU environments, and therefore, we could not determine ICU stay accurately. We did not find a lower mortality in the subgroup of nonsevere patients treated with ivermectin; however, our study was not powered to assess these differences because the overall mortality in nonsevere patients was low. Similarly, the study was not powered to determine whether extubation rates were higher in the ivermectin group. These should be investigated further with a larger randomized controlled trial.

Interpretation

Our study has several limitations. Because of the retrospective observational nature of the study, despite adjustment for known confounders and propensity score matching, we cannot exclude the possibility of unmeasured confounding factors. Although more of the control group was enrolled in the first weeks of the study, suggesting the possibility of timing bias, this may be offset by preferential treatment of more severe patients with ivermectin early in the study because of low initial availability. We also did not find consistently different mortality outcomes with time over the short duration of this study. We also did not find evidence of immortal time bias, because only one of the control patients died fewer than 5 days from admission, the average time from admission to death was 11 days, and the vast majority of patients received ivermectin in 2 days or fewer. If we omit the patient with potential immortal time from the analysis, the mortality difference remains significant in both unmatched (15.0% vs 24.5% for ivermectin and usual care, respectively; $P < .05$) and matched (12.4% vs 25.0% for ivermectin and usual care, respectively; $P < .03$) cohorts. Most of the studied patients received hydroxychloroquine with or without azithromycin, and we are unable to determine whether these medications had an added benefit or whether mortality would have been better in both groups without these agents.

We showed that ivermectin administration was associated significantly with lower mortality among patients with COVID-19, particularly in patients with more severe pulmonary involvement. Interpretation of these findings are tempered by the limitations of the retrospective design and the possibility of confounding. Appropriate dosing for this indication is not known, nor are the effects of ivermectin on viral load or in patients with milder disease. Further studies in appropriately designed randomized trials are recommended before any conclusions can be made.

Acknowledgments

Author contributions: J. C. R., lead author, had full access to all of the data in the study and contributed to the study design, data collection and interpretation, and writing of manuscript. M. S. S. provided data analysis and interpretation and contributed to writing of the manuscript. N. F. contributed to data collection and literature search. F. V. contributed to the study design and data collection. J. S. contributed to data collection and data organization. J.-J. R., corresponding author, contributed substantially to the study design, data analysis and interpretation, and the writing of the manuscript.

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References

1. Navarro M, Camprubí D, Requena-Méndez A, et al. Safety of high-dose ivermectin: a systematic review and meta-analysis. *J Antimicrobial Chemother*. 2020;75:827-834.
2. Boldescu V, Behnam MAM, Vasilakis N, Klein CD. Broad-spectrum agents for flaviviral infections: dengue, Zika and beyond. *Nat Rev Drug Discov*. 2017;16:565-586.
3. Wagstaff KM, Sivakumaran H, Heaton SM, Harrich D, Jans DA. Ivermectin is a specific inhibitor of importin α/β-mediated nuclear import able to inhibit replication of HIV-1 and dengue virus. *Biochem J*. 2012;443:851-856.
4. Caly L, Druce JD, Catton MG, Jans DA, Wagstaff KM. The FDA-approved drug ivermectin inhibits the replication of SARS-CoV-2 in vitro. *Antiviral Res*. 2020;178:104787.
5. Munoz J, Ballester MR, Antonijoan RM, et al. Safety and pharmacokinetic profile of fixed dose ivermectin with an innovative 18 mg tablet in healthy adult volunteers. *PLoS Negl Trop Dis*. 2018;12(1):e0006020.
6. Richardson S, Hirsch JS, Narasimha M, et al. Presenting characteristics, comorbidities, and outcomes among 5700 patients hospitalized with COVID-19 in the New York City area. *JAMA*. 2020;323(20):2052-2059.
7. Zhou F, Yu T, Du R, et al. Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. *Lancet*. 2020;395(10229):1054-1062.
8. Magagnoli J, Narendran S, Pereira F, et al. Outcomes of hydroxychloroquine usage in United States veterans hospitalized with Covid-19 [published online ahead of print April 23, 2020]. *medRxiv*. https://doi.org/10.1101/2020.04.16.20065920.
9. Horby P, Lim WS, Emberson JR, et al. RECOVERY Collaborative Group. Dexamethasone in hospitalized patients with Covid-19-preliminary report [published online ahead of print July 7, 2020]. *N Engl J Med*. https://doi.org/10.1056/NEJMoa2021426.
10. Garg S, Kim L, Whitaker M, et al. Hospitalization rates and characteristics of patients hospitalized with laboratory-confirmed coronavirus disease 2019—COVID-NET, 14 states, March 1-30, 2020. *MMWR Morb Mortal Wkly Rep*. 2020;69(15):458-464.
11. Price CC, Altice FL, Shyr Y, et al. Tocilizumab treatment for cytokine release syndrome in hospitalized COVID-19 patients: survival and clinical outcomes. *Chest*. 2020;158(4):1397-1408.

MATH+ HOSPITAL TREATMENT PROTOCOL FOR COVID-19

Version **13**
2021-06-30

MEDICATION	INDICATION/INITIATION	RECOMMENDED DOSING	TITRATION/DURATION
METHYLPREDNISOLONE	A. *Upon oxygen requirement or abnormal chest X-ray*	Preferred: 80 mg IV bolus, then 40 mg IV twice daily Alternate: 80 mg / 240 ml normal saline IV infusion at 10 ml/hr Follow COVID-19 Respiratory Failure protocol (see flccc.net/respiratory-support-c19/)	A1. If no improvement in oxygenation in 2–4 days, double dose to 160 mg/daily. A2. Upon need for FIO_2 > 0.6 or ICU, escalate to "Pulse Dose" below (B) A3. Once off IMV, NPPV, or High flow O_2, decrease to 20 mg twice daily. Once off O_2, then taper with 20 mg/day × 5 days then 10 mg/day × 5 days
	B. *Refractory Illness/ Cytokine Storm*	"Pulse" dose with 125 –250 mg IV every 6 hours	Continue × 3 days then decrease to 160 mg IV/ daily dose above, taper according to oxygen requirement (A). If no response or CRP/Ferritin high/rising, consider mega-dose IV ascorbic acid and/or "Therapeutic Plasma Exchange" below
ASCORBIC ACID	*O_2 < 4 L on hospital ward*	500–1000 mg oral every 6 hours	Until discharge
	O_2 > 4 L or in ICU	50 mg/kg IV every 6 hours	Up to 7 days or until discharge from ICU, then switch to oral dose above
	If in ICU and not improving	Consider mega-doses: 25 grams IV twice daily for 3 days	Completion of 3 days of therapy
THIAMINE	*ICU patients*	200 mg IV twice daily	Up to 7 days or until discharge from ICU
HEPARIN (LMWH)	*If initiated on a hospital ward*	1 mg/kg twice daily — Monitor anti-Xa levels, target 0.6–1.1 IU/ml	Until discharge then start DOAC at half dose × 4 weeks
	If initiated in the ICU	0.5 mg/kg twice daily — Monitor anti-Xa levels, target 0.2–0.5 IU/ml	
IVERMECTIN * *(a core medication)*	*Upon admission to hospital and/or ICU*	0.4–0.6 mg/kg per dose — daily (Take with or after meals)	For 5 days or until recovered
Fluvoxamine **	*Hospitalized patients*	50 mg PO twice daily	10–14 days
Cyproheptadine	*If any of: 1) on fluvoxamine, 2) hypoxemic, 3) tachypneic/respiratory distress, 4) oliguric/kidney injury*	8 mg — 3 x daily	until discharge, slow taper once sustained improvements noted
Anti-Androgen Therapy	*Hospitalized patients (Men only)*	Dutasteride 0.5 mg daily or Finasteride 5 mg daily	until fully recovered
Vitamin D	*Hospitalized patients*	Calcifediol preferred: 0.5 mg PO day 1, then 0.2 mg PO day 2 and weekly thereafter Cholecalciferol: 20,000–60,000 IU single dose PO then 20,000 IU weekly	Until discharge
Atorvastatin	*ICU Patients*	80 mg PO daily	Until discharge
Melatonin	*Hospitalized patients*	6–12 mg PO at night	Until discharge
Zinc	*Hospitalized patients*	75–100 mg PO daily	Until discharge
Famotidine	*Hospitalized Patients*	40–80 mg PO twice daily	Until discharge
Therapeutic Plasma Exchange	*Patients refractory to pulse dose steroids*	5 sessions, every other day	Completion of 5 exchanges

Legend: CRP = C-Reactive Protein, DOAC = direct oral anti-coagulant, FiO_2 = Fraction of inspired oxygen, ICU = Intensive Care Unit, IMV = Invasive Mechanical Ventilation, IU = International units, IV = intravenous, NIPPV = Non-Invasive Positive Pressure Ventilation, O_2 = oxygen, PO (per os) = oral administration

* The safety of ivermectin in pregnancy has not been established thus treatment decisions require an assessment of the risks vs. benefits in a given clinical situation.

** Some individuals who are prescribed fluvoxamine experience acute anxiety which needs to be carefully monitored for and treated by the prescribing clinician to prevent rare escalation to suicidal or violent behavior.

For **optional medicines** and an overview of the developments in prevention and treatment of COVID-19, please visit flccc.net/optional-medicines

Please check our homepage www.flccc.net regularly for updates of our COVID-19 Protocols! – New medications may be added and/or dose changes to existing medications may be made as further scientific studies emerge!

MATH+ HOSPITAL TREATMENT PROTOCOL FOR COVID-19

Version **13**
2021-06-30

TO CONTROL INFLAMMATION & EXCESS CLOTTING

In all COVID-19 hospitalized patients, the therapeutic focus must be placed on early intervention utilizing powerful, evidence-based therapies to counteract:

— The overwhelming and damaging inflammatory response
— The systemic and severe hyper-coagulable state causing organ damage

By initiating the protocol soon after a patient meets criteria for oxygen supplementation, the need for mechanical ventilators and ICU beds will decrease dramatically.

TREATMENT OF LOW OXYGEN

— If patient has low oxygen saturation on nasal cannula, initiate heated high flow nasal cannula.
— Do not hesitate to increase flow limits as needed.
— Avoid early intubation that is based solely on oxygen requirements. Allow "permissive hypoxemia" as tolerated.
— Intubate only if patient demonstrates excessive work of breathing.
— Utilize "prone positioning" to help improve oxygen saturation.

ABOUT THE MATH+ HOSPITAL TREATMENT PROTOCOL FOR COVID-19

Our **MATH+** protocol is designed for hospitalized patients, to counter the body's overwhelming inflammatory response to the SARS-CoV-2 virus. The protocol is based on numerous medical journal publications over decades. It is the hyper-inflammation, not the virus itself, that damages the lungs and other organs and ultimately causes death in COVID-19. We have found the **MATH+** protocol to be a highly effective combination therapy in controlling this extreme inflammatory response and we have now added ivermectin as a core component given the profound emerging efficacy data in hospitalized patients reviewed here (www.flccc.net/flccc-ivermectin-review-covid-19).

The steroid **M**ethylprednisolone is a key component, increasing numbers of studies (see https://flccc.net/medical-evidence) show its profound effectiveness in COVID-19, which is made more potent when administered intravenously with high doses of the antioxidant **A**scorbic acid given that the two medicines have multiple synergistic physiologic effects. **T**hiamine is given to optimize cellular oxygen utilization and energy consumption, protecting the heart, brain, and immune system. The anticoagulant **H**eparin is important for preventing and dissolving blood clots that appear with a very high frequency in patients not given blood thinners. The **+** sign indicates several important co-interventions that have strong physiologic rationale and an excellent safety profile. It also indicates that we plan to adapt the protocol as our insights and the published medical evidence evolve.

Timing is a critical factor in the successful treatment of COVID-19. Patients must go to the hospital as soon as they experience difficulty breathing or have a low oxygen level. The **MATH+** protocol then should be administered soon after a patient meets criteria for oxygen supplementation (within the first hours after arrival in the hospital), in order to achieve maximal efficacy as delayed therapy has led to complications such as the need for mechanical ventilation.

If administered early, this formula of FDA-approved, safe, inexpensive, and readily available drugs can eliminate the need for ICU beds and mechanical ventilators and return patients to health.

DISCLAIMER

This protocol is solely for educational purposes regarding potentially beneficial therapies for COVID-19. Never disregard professional medical advice because of something you have read on our website and releases. It is not intended to be a substitute for professional medical advice, diagnosis, or treatment in regards to any patient. Treatment for an individual patient should rely on the judgement of your physician or other qualified health provider. Always seek their advice with any questions you may have regarding your health or medical condition.

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Budesonide dosing *for* outpatient COVID *per* the Oxford RCT

(+ASA, nutraceuticals, etc. at provider's discretion)

THE UNIVERSITY OF OXFORD on February 8, 2021 released its "Steroids in COVID-19" (STOIC) randomized controlled trial of inhaled budesonide powder (Pulmicort) for treatment of early outpatient COVID.[1]

Beginning an average 3 days after symptom onset, inhaled budesonide, 400 mcg/puff, 2 puffs bid was taken for a median duration of 7 (4 to 10.5) days. **Urgent care visits & hospital admissions were 90% lower** compared to usual care (P = 0.004).

The trial was designed around a hoped-for 50% reduction in risk. However, because the actual result was a 90% reduction, the trial achieved statistical significance sooner than expected. On December 9, the study team requested an independent statistical monitoring committee review, on the basis of which the trial was concluded early. One of the reasons given was "ethical consideration of the primary outcome."

> ***"We stopped early because, how could we ethically randomise participants to the non-budesonide arm knowing they had a 10-fold chance of needing hospitalisation? This, in addition to knowing that people recover faster in the budesonide arm, have lower fevers, report less congestive symptoms, etc."*** **—Dan V. Nicolau Jr., MD PhD**

- **Inhaled budesonide powder (Pulmicort)**

  180 mcg/puff, 3 puffs tid = 1,620 mcg/day

  One Pulmicort 180 mcg/puff Flexhaler provides 120 puffs, sufficient for 13.3 days.

  or

  400 mcg/puff, 2 puffs bid = 1,600 mcg/day

  One Pulmicort 400 mcg/puff Turbohaler provides 50 puffs, sufficient for 12.5 days.

  The systemic effect looks equivalent to ~51 mg oral hydrocortisone, consistent with what would be needed to properly regulate the immune response in the absence of a robust endogenous adrenal cortisol stress response. Dosage in this optimal range will likely be key: Just enough to replicate a more optimal adrenal cortisol response and put a light hand brake on the inflammatory response but not so much it over-suppresses immune function.

- **ASA** 325 mg/day (to help counter COVID's pro-thrombotic effect)
- **Etc.** at provider's discretion

Potentially helpful nutraceuticals:

- **Vitamin D3** 10,000 IU/day. After recovery, reduce to 5,000 IU/day and maintain long-term.
- **Zinc** 50 mg/day elemental
- **Quercetin** 500 mg bid (zinc ionophore; to enhance Zn antiviral effect)
- **Vitamin C** 3,000 mg/day
- **Melatonin** 1 - 3 mg at bedtime (antiviral; may be added PRN, as it can cause daytime drowsiness)

1. Ramakrishnan S, Nicolau DV, Langford B, Mahdi M, Jeffers H, Mwasuku C, et al., Univ. of Oxford, **Inhaled budesonide in the treatment of early COVID-19 illness: a randomised controlled trial**. MedRxiv preprint. 2021 Jan 8. https://www.medrxiv.org/content/10.1101/2021.02.04.21251134v1 [Full Text PDF]

Expert Physicians Suggested Full Therapeutic Protocol That is Working for Breathing Issues and Other Symptoms.

****** Ask your doctor if these therapies are right for you. ******

Prescriptions
Budesonide 0.5-1mg/2ml respules
Sig:1 respule q 2 hours PRN severe symptoms
Dispense 2 boxes

Clarithromycin 500mg
Sig:1 Tab PO BID with food
Dispense 14. Refills X 1

Zinc 50mg
Sig:1 PO QD
Dispense 30 Refills X 1

For Adults
Coated Aspirin 81mg
Sig:1 PO QD
Dispense 90 Refills X 3

Other over-the-counter items that patients have reported have aided in their recovery:

1. Tylenol – 1000 mg
   - Use every four hours for headache/fever (no more than 4 times daily)

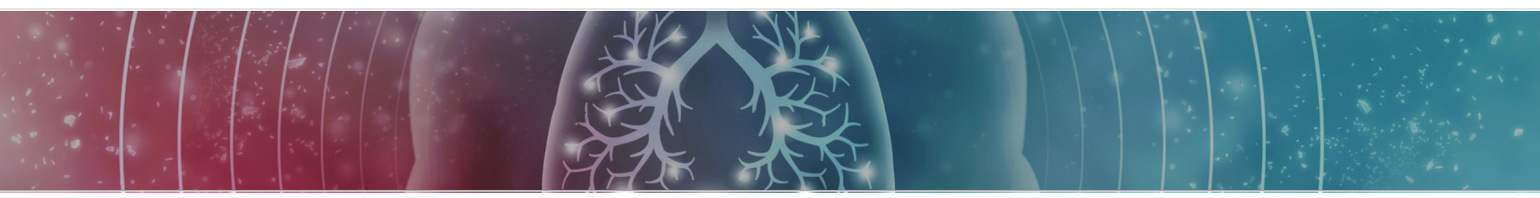
2. Budesonide nasal spray (such as Rhinocort)
   - Follow instructions on package

3. Mouthwash– either the whitening kind (with hydrogen peroxide) or the ones that say "kills 99.9% germs."
   - Gargle twice daily

4. Hydroshot drink (molecular hydrogen enriched water) available at h2bev.com.
   - Drink 1 can in AM on empty stomach per day until symptoms resolve

5. Silver Bullet drink (hydrogen infused green tea with zinc) available at h2bev.com
   - Drink 1 can in PM with food until symptoms resolve

Budesonide Works



Inhaled budesonide is a safe, generic, inexpensive prescription medication. It is used by millions of people who suffer from asthma every day. It can be prescribed by any doctor or nurse practitioner for respiratory symptoms (FDA-approved). Budesonide is so safe that it is in some over-the-counter nasal sprays such as Rhinocort.

Please note that this is NOT Dr. Bartlett's personal website so he does not see nor respond to any email. Please do not email him through this website. We are volunteers who are just helping people get access to solutions.

UPDATE: The most recent study by Oxford University (randomized control trial) showed a 90% reduction in hospitalization for people with COVID.

Find a Provider | Got Covid?

How to use this website:

(See Medical Disclaimer)

1. If you have **Covid symptoms or test positive**, the Got Covid? page (stage 2) may help.
2. If you were **exposed** to someone or need help with **prevention**, the Got Covid? page (stage 1) may help.
3. If you need to **find a provider** for the protocol, the Providers page may help.
4. If you need help **advocating for a loved one** with Covid in the hospital, the Got Covid? page (stage 3) may help.
5. If you need help with "**long haulers syndrome**" or lingering issues, the Got Covid? page (stage 4) may help.
6. If you are a **doctor** who wants **proof of the protocol**, read the studies and articles on the Validation page and read or watch the doctor and patient testimonials on the Stories page.
7. If you are a **provider** and would like to be included in our network (publicly or privately), go to the Providers page and complete the form.
8. If you want to **download the full protocol** to give to your doctor, you can find it here.

Quotes about Budesonide and Covid …

"…I am heartened that a relatively safe, widely available and well studied medicine such as an inhaled steroid [budesonide] could have an impact on the pressures we are experiencing during the pandemic."
Professor Mona Bafadhel of Nuffield Department of Medicine, University of *Oxford*

"It's enough for me to know that I'm not putting tubes in people's throats, knowing that they might not ever get them out."
Andrea Malcolm, Critical Care Provider, Frio Regional Hospital

"…but if we keep 60 percent of people out of hospital (using budesonide), then, well, that's the kind of thing we throw a barbecue over."
Dr. Dan Nicolau, Covid researcher, University of *Oxford*

"For days I thought I was going to pass. Within hours of taking the budesonide treatments from home, I knew I was going to pull through. Second day I felt better. Third day I felt much better. On the eighth day I felt fabulous. On the tenth day, I tested negative. And now I have been able to help others."
Francisco Bejarano, Covid survivor

"If I had not seen the video of Dr. Bartlett's success and if I had not had the wherewithal to fight, to advocate, and finally to demand that I be prescribed the budesonide, I believe that I would have been in the hospital on a ventilator and probably would not be writing this letter."
James Lloyd, Covid survivor

****Medical disclaimer:** This website was created for informational purposes only and has no ties to any drug company or physician. The content is not intended to be a substitute for professional medical advice, diagnosis, or treatment. Always seek the advice of your physician or other qualified health provider with any questions you may have regarding a medical condition. Never disregard professional medical advice or delay in seeking it because of*

*Continued: …of something you have read on this website. In addition, no one involved in this website has financial ties to any of the suggested therapies. We are merely patient advocates, trying to save lives and fight medical censorship.****

Prophylaxis and Treatment for COVID-19 in Nursing Homes: Video Highlights

Posted on December 1, 2020

Nursing homes in industrialized countries is where the largest share of COVID-19 deaths occur, yet little attention is paid to offer real solutions for their residents and staff.

Indeed, with the second wave of pandemic hitting many countries, there are again substantial outbreaks in nursing homes, which shows that the measures adopted so far remain ineffective.

See also:

A Protocol for the Prevention and Early Treatment of COVID-19 in Nursing Homes

This protocol is presented by Dr George Fareed, an Harvard Trained medical doctor with a distinguished career of 50 years in medicine, who has treated ... Continue reading

These video highlights present excerpts of a webinar and two interviews that address precisely how to implement, at the level of nursing homes, straightforward prophylactic and therapeutic protocols, in view of containing the outbreaks and reducing to the minimum severe forms of the disease and mortality.

Yes, very concrete solutions exist for nursing homes, their residents and staff, even if they are barely being recommended by authorities in most countries.

These highlights feature some of the best experts in the world, and are pretty unique, as there is little information available, in an easily digestible format, on this important matter.

So please watch the highlights and don't hesitate to provide feedback.

Just in case you wouldn't get to the end of the video, here are the conclusions:

1- Easy to implement prophylaxis and therapeutic approaches exist and could be widely implemented at the level of nursing homes.

>> Dr Caxton Opere & COVID-19 Early Treatment in Rural Texas

2 – The agents used for prophylaxis and early therapies are mostly extremely cheap generic drugs as well as over the counter supplements.

3 – Past experiences with prophylaxis and treatment in nursing homes provide an excellent knowledge base as to how to implement such therapeutic approaches on a wide scale.

4 – All nursing homes should offer prophylaxis to residents and should develop detailed plans so as to be ready to provide early treatment to residents and staff in case of an outbreak.

Prophylaxis & Early Treatment in Nursing Homes – a Webinar with Dr Robin Armstrong and Dr George Fareed

We are pleased to present the video recording of our webinar with Dr Robin Armstrong and Dr George Fareed, two medical doctors who have been ... Continue reading

Professor Thomas Borody Interview – Part 1

This is the first part of our interview with the esteemed Professor Thomas Borody, which covers the following aspects: What is the recommended ivermectin-based tri-therapy ... Continue reading

Professor Christian Perronne Interview – Part 1

One of the most prominent experts in COVID-19, both from a therapeutic and a policy perspective, is Professor Christian Perronne from France. Professor Perronne, MD, ... Continue reading

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Early Treatment of the Inflammatory Stage of COVID-19 and its Rationale

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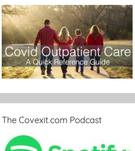

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8. Interview with Marc Girardot: Natural Immunity
9. The Practice of Early Outpatient Treatment
10. Professor Thomas Borody Interview – Part 1

Jean-Pierre K. Follow

JBAragon 22h

Nassos Katris, 32 ans, styliste grec, retrouvé mort à son domicile, le lendemain de son injection.
Son père : "Il avait peur de se vacciner, mais nous l'avons exhorté à le faire. Maudit soit ce moment où je lui ai dit d'aller se faire vacciner"
http://euskalnews.com/2021/08/muere-el-disenador-griego-nass...

12:35 1436 Twitter

Covid19Crusher 22h

Evidence of Merck throttling the supply of Ivermectin in Australia, like they do in Canada or Japan...

887 1021 Twitter

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About this Blog

This is a blog by Jean-Pierre Kiekens, an Oxford graduate and former university lecturer, presenting opinions, news and independent policy analysis about the pandemic with focus on early treatments. This website does NOT provide any therapeutic advice. For that, please refer yourself to your doctor or health care provider.

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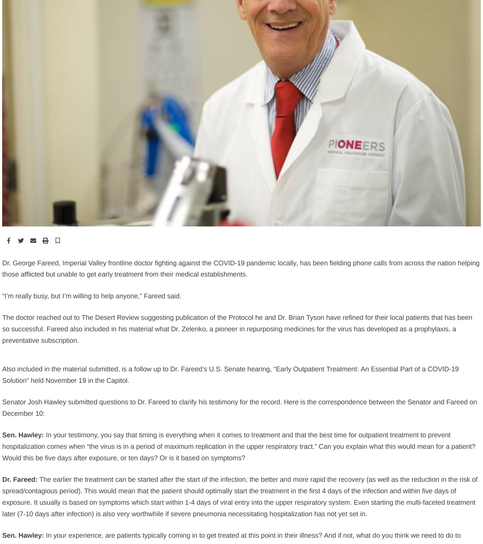
For more news and discussions, join our (uncensored) group!

MeWe

And we also have a group on Telegram!

Dr. George Fareed and Dr. Brian Tyson share early treatment protocol

Dec 12, 2020 Updated Apr 16, 2021



Dr. George Fareed, Imperial Valley frontline doctor fighting against the COVID-19 pandemic locally, has been fielding phone calls from across the nation helping those afflicted but unable to get early treatment from their medical establishments.

"I'm really busy, but I'm willing to help anyone," Fareed said.

The doctor reached out to The Desert Review suggesting publication of the Protocol he and Dr. Brian Tyson have refined for their local patients that has been so successful. Fareed also included in his material what Dr. Zelenko, a pioneer in repurposing medicines for the virus has developed as a prophylaxis, a preventative subscription.

Also included in the material submitted, is a follow up to Dr. Fareed's U.S. Senate hearing, "Early Outpatient Treatment: An Essential Part of a COVID-19 Solution" held November 19 in the Capitol.

Senator Josh Hawley submitted questions to Dr. Fareed to clarify his testimony for the record. Here is the correspondence between the Senator and Fareed on December 10.

Sen. Hawley: In your testimony, you say that timing is everything when it comes to treatment and that the best time for outpatient treatment to prevent hospitalization comes when "the virus is in a period of maximum replication in the upper respiratory tract." Can you explain what this would mean for a patient? Would this be five days after exposure, or ten days? Or is it based on symptoms?

Dr. Fareed: The earlier the treatment can be started after the start of the infection, the better and more rapid the recovery (as well as the reduction in the risk of spread/contagious period). This would mean that the patient should optimally start the treatment in the first 4 days of the infection and within five days of exposure. It usually is based on symptoms which start within 1-4 days of viral entry into the upper respiratory system. Even starting the multi-faceted treatment later (7-10 days after infection) is also very worthwhile if severe pneumonia necessitating hospitalization has not yet set in.

Sen. Hawley: In your experience, are patients typically coming in to get treated at this point in their illness? And if not, what do you think we need to do to encourage high-risk individuals to seek outpatient treatment and care?

Dr. Fareed: More patients are coming in to get treated or contacting me from afar for treatment when they can't receive the treatment in their local communities. Sadly, many infected people and primary care doctors and doctors in ERs follow the NIH and Dr. Fauci stipulations with no effective treatments offered. We need to have the NIH/FDA/CDC formally acknowledge the importance of early treatment with moderately acting, safe anti-virals so readily available. When (if ever) that happens, everything would improve dramatically. Thank you, Senator Hawley, for all your efforts and for allowing me to respond to these excellent questions.

The following is the protocol Drs. Fareed and Tyson have jointly developed as most effective for their COVID-19 patients:

Fareed/Tyson COVID-19 Treatment Protocol

HCQ 200 mg tabs #16 (HCQ = hydroxychloroquine)

Zinc sulfate 22O mg (or elemental Zinc 50 mg) # 15

Azithromycin 500 mg # 5 (or Z pack) or

Doxycycline 100 mg # 10)

Ivermectin 3 mg tabs #8

Aspirin 325 mg tabs #30

Day 1 - HCQ 2 tabs twice a day

Zinc sulfate tab twice a day

(Azithromycin tab one per day or doxycycline cap twice a day)

Ivermectin 12 mg on day 1 only

Aspirin 325 mg

Days 2-5

HCQ tab 3 times a day

Zinc sulfate 3 times a day

(Azithromycin tab daily or doxycycline cap twice a day)

Aspirin 325 mg daily

Ivermectin 12 mg on day 3 if symptoms warrant

Prednisone 60 mg daily x 5-7 days or

Dexamethasone 4 mg bid if wheezing /SOB

Budesonide 0.5-1mg/2ml via nebulizer bid

Vitamin D3 5000 iu daily

Pepcid 20 mg daily

Continue daily Aspirin 325 mg

Over the counter prevention:

Elemental Zinc 25 mg once a day

Vitamin D 4000 iu once a day

Vitamin C 1000 mg once a day

Quercetin 500 mg once a day

If Quercetin is unavailable, then use Epigallocatechin-gallate (EGCG) 400mg once a day

Dr. Fareed also included Dr. Zelenko's (Twitter: @zev_dr) COVID-19 Prophylaxis Protocol:

Prophylaxis is an action taken to prevent or protect against a specified disease. Greek in origin, from the word "phylax", meaning "to guard" and "watching."

Low Risk Patients

Young healthy people do not need prophylaxis against COVID-19. In young and healthy people, this infection causes mild cold-like symptoms. It is advantageous for these patients to be exposed to COVID-19, build up their antibodies and have their immune system clear the virus. This will facilitate the development of herd immunity and help prevent future COVID-19 pandemics. However, if these patients desire prophylaxis against COVID-19, then they should take the protocol noted below.

Moderate-Risk Patients

Patients from this category are healthy but have high potential viral-load exposure. This group includes medical personnel, caregivers of high-risk patients, people who use public transportation, first responders and other essential personnel who are crucial to the continued functioning of society. These patients should be encouraged to take prophylaxis against COVID-19 in accordance with the protocol noted below.

High-Risk Patients

Patients are considered high risk if they are over the age of 60, or if they are younger than 60 but they have comorbidities, that is, they have other health conditions that put them at risk. These patients have between a 5 to 10 percent mortality rate if they are infected with COVID-19. These patients should be strongly encouraged to take prophylaxis against COVID-19 in accordance with the protocol noted below.

Protocol for Low and Moderate Risk Patients:

Elemental Zinc 25 mg once a day[1]

Vitamin C 1000 mg once a day[2]

Quercetin 500 mg once a day

If Quercetin is unavailable, then use Epigallocatechin-gallate (EGCG) 400 mg once a day[3]

Protocol for High-Risk Patients:

Elemental Zinc 25 mg once a day

Hydroxychloroquine (HCQ[4]) 200 mg once a day for five days, then once a week

If HCQ is unavailable, then use the Protocol for Low and Moderate Risk Patients.

[1]https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7365891/

[2]https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7318306/

[3]https://pubs.acs.org/doi/10.1021/jf5014633

[4]https://www.preprints.org/manuscript/202007.0025/v1

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28th April 2021

Government of India
Ministry of Health & Family Welfare

Revised guidelines for Home Isolation of mild /asymptomatic COVID-19 cases

1. Background

The guidelines are in supersession to the guidelines issued on the subject on 2nd July, 2020.

As per the guidelines, the patients who are clinically assigned to be **mild /asymptomatic are recommended for home isolation.**

2. Asymptomatic cases; mild cases of COVID-19

The asymptomatic cases are laboratory confirmed cases not experiencing any symptoms and having oxygen saturation at room air of more than 94%.
Clinically assigned mild cases are patients with upper respiratory tract symptoms (&/or fever) without shortness of breath and having oxygen saturation at room air of more than 94%.

3. Patients eligible for home isolation

i. The patient should be clinically assigned as mild/ asymptomatic case by the treating Medical Officer.

ii. Such cases should have the requisite facility at their residence for self-isolation and for quarantining the family contacts.

iii. A care giver should be available to provide care on 24 x7 basis. A communication link between the caregiver and hospital is a prerequisite for the entire duration of home isolation.

iv. Elderly patients aged more than 60 years and those with co-morbid conditions such as Hypertension, Diabetes, Heart disease, Chronic lung/liver/ kidney disease, Cerebro-vascular disease etc shall only be allowed home isolation after proper evaluation by the treating medical officer.

v. Patients suffering from immune compromised status (HIV, Transplant recipients, Cancer therapy etc.) are not recommended for home isolation and shall only be allowed home isolation after proper evaluation by the treating medical officer.

vi. The care giver and all close contacts of such cases should take Hydroxychloroquine prophylaxis as per protocol and as prescribed by the treating medical officer.

vii. In addition, the guidelines on home-quarantine for other members available at: https://www.mohfw.gov.in/pdf/Guidelinesforhomequarantine.pdf, shall be also followed.

4. Instructions for the patient

i. Patient must isolate himself from other household members, stay in the identified room and away from other people in home, especially elderlies and those with co-morbid conditions like hypertension, cardiovascular disease, renal disease etc.
ii. The patient should be kept in a well-ventilated room with cross ventilation and windows should be kept open to allow fresh air to come in.
iii. Patient should at all times use triple layer medical mask. Discard mask after 8 hours of use or earlier if they become wet or visibly soiled. In the event of care giver entering the room, both care giver and patient may consider using N 95 mask.
iv. Mask should be discarded only after disinfecting it with 1% Sodium Hypochlorite.
v. Patient must take rest and drink lot of fluids to maintain adequate hydration.
vi. Follow respiratory etiquettes at all times.
vii. Frequent hand washing with soap and water for at least 40 seconds or clean with alcohol-based sanitizer.
viii. Don't share personal items with other people in the household.
ix. Ensure cleaning of surfaces in the room that are touched often (tabletops, doorknobs, handles, etc.) with 1% hypochlorite solution.
x. Self-monitoring of blood oxygen saturation with a pulse oximeter is strongly advised.
xi. The patient will self-monitor his/her health with daily temperature monitoring and report promptly if any deterioration of symptom as given below is noticed.

Monitoring chart

Day of symptoms and time (every 4 hourly)	Temperature	Heart rate (from pulse oximeter)	SpO2 % (from pulse oximeter)	Feeling: (better /same /worse)	Breathing: (better / same/ worse)

5. Instructions for caregivers

i. Mask:

- The caregiver should wear a triple layer medical mask. N95 mask may be considered when in the same room with the ill person.
- Front portion of the mask should not be touched or handled during use.
- If the mask gets wet or dirty with secretions, it must be changed immediately.
- Discard the mask after use and perform hand hygiene after disposal of the mask.
- He/she should avoid touching own face, nose or mouth.

ii. Hand hygiene

- Hand hygiene must be ensured following contact with ill person or his immediate environment.
- Hand hygiene should also be practiced before and after preparing food, before eating, after using the toilet, and whenever hands look dirty.
- Use soap and water for hand washing at least for 40 seconds. Alcohol-based hand rub can be used, if hands are not visibly soiled.
- After using soap and water, use of disposable paper towels to dry hands is desirable. If not available, use dedicated clean cloth towels and replace them when they become wet.
- Perform hand hygiene before and after removing gloves.

iii. Exposure to patient/patient's environment

- Avoid direct contact with body fluids of the patient, particularly oral or respiratory secretions. Use disposable gloves while handling the patient.
- Avoid exposure to potentially contaminated items in his immediate environment (e.g. avoid sharing cigarettes, eating utensils, dishes, drinks, used towels or bed linen).
- Food must be provided to the patient in his room. Utensils and dishes used by the patient should be cleaned with soap/detergent and water wearing gloves. The utensils and dishes may be re-used.
- Clean hands after taking off gloves or handling used items. Use triple layer medical mask and disposable gloves while cleaning or handling surfaces, clothing or linen used by the patient.
- Perform hand hygiene before and after removing gloves.

iv. Biomedical Waste disposal

- Effective waste disposal shall be ensured so as to prevent further spread of infection within household. The waste (masks, disposable items, food packets etc.) should be disposed of as per CPCB guidelines (available at: http://cpcbenvis.nic.in/pdf/1595918059_mediaphoto2009.pdf)

6. Treatment for patients with mild /asymptomatic disease in home isolation

i. Patients must be in communication with a treating physician and promptly report in case of any deterioration.
ii. Continue the medications for other co-morbid illness after consulting the treating physician.
iii. Patients to follow symptomatic management for fever, running nose and cough, as warranted.
iv. Patients may perform warm water gargles or take steam inhalation twice a day.
v. If fever is not controlled with a maximum dose of Tab. Paracetamol 650mg four times a day, consult the treating doctor who may consider advising other drugs like non-steroidal anti-inflammatory drug (NSAID) (ex: Tab. Naproxen 250 mg twice a day).
vi. Consider Tab Ivermectin (200 mcg/kg once a day, to be taken empty stomach) for 3 to 5 days.

vii. Inhalational Budesonide (given via inhalers with spacer at a dose of 800 mcg twice daily for 5 to 7 days) to be given if symptoms (fever and/or cough) are persistent beyond 5 days of disease onset.

viii. The decision to administer Remdesivir or any other investigational therapy must be taken by a medical professional and administered only in a hospital setting. **Do not** attempt to procure or administer **Remdesivir at home.**

ix. Systemic **oral steroids** not indicated in mild disease. If symptoms persist beyond 7 days (persistent fever, worsening cough etc.) consult the treating doctor for treatment with low dose oral steroids.

x. In case of falling oxygen saturation or shortness of breath, the person should require hospital admission and seek immediate consultation of their treating physician/surveillance team.

7. When to seek medical attention

Patient / Care giver will keep monitoring their health. Immediate medical attention must be sought if serious signs or symptoms develop. These could include-

i. Difficulty in breathing,
ii. Dip in oxygen saturation (SpO2 < 94% on room air)
iii. Persistent pain/pressure in the chest,
iv. Mental confusion or inability to arouse,

8. When to discontinue home isolation

Patient under home isolation will stand discharged and end isolation after at least 10 days have passed from onset of symptoms (or from date of sampling for asymptomatic cases) and no fever for 3 days. **There is no need for testing after the home isolation period is over.**

9. Role of State/District Health Authorities

i. States/ Districts should monitor all cases under home isolation.

ii. The health status of those under home isolation should be monitored by the field staff/surveillance teams through personal visit along with a dedicated call centre to follow up the patients on daily basis.

iii. The clinical status of each case shall be recorded by the field staff/call centre (body temperature, pulse rate and oxygen saturation). The field staff will guide the patient on measuring these parameters and provide the instructions (for patients and their care givers). This mechanism to daily monitor those under home isolation shall be strictly adhered to.

iv. Details about patients under home isolation should also be updated on COVID-19 portal and facility app (with DSO as user). Senior State and District officials should monitor the records updation.

v. A mechanism to shift patient in case of violation or need for treatment has to be established and implemented. Sufficient dedicated ambulances for the same shall be organised. Wide publicity for the same shall also be given to the community.

vi. All family members and close contacts shall be monitored and tested as per protocol by the field staff.

vii. Patient on home isolation will be discharged from treatment as indicate above. These discharge guidelines shall be strictly adhered to.

COVID-19:THERAPEUTIC PLAN AND POTENTIAL THERAPIES. Aguirre-Chang, Gustavo; Trujillo F, Aurora; Córdova M, José Aníbal. February 2021.

Days since symptoms start	Day 1 / Day 2 / Day 3 — The first 4 days there is no pulmonary involvement or this is very little	Day 4	Day 5	Day 6	Day 7 — Days that are + hospitalized	IF IT PROGRESSES 8 goes to SIRS	9	10	11 — Requires ICU	12	13 — Req. VM	14
PHASES	**I. INITIAL, or NASAL and PHARYNGEAL + Intest.**		**II. PULMONARY**									**III. MULTI-ORGAN**
LOCATION	*Nose and Pharynx. The Variants affect the intestines and the heart. In children it is multi-organ.*		*Progress to Lungs, Intestines, Myocardium-Pericard, Muscles.*									*Investig. Brain, Kidney, Skin. Feet.*
VIRAL LOAD	*The Vir. load is estimated according to the response to treatment, 27-30 h. after the treat begins*		*MEDIUM to HIGH Viral Lo.*		*HIGH VL: Lungs, Intestines, Heart.*							*Very HIGH Total Body Viral Load*
Response to treatment, Diagnosis and Severity	Rapid response to treatment, w/ improvement from 97 to 100% = LOW Vir. Load. Rhinitis+Pharyng.	Partial response to treatment, 25 to 96 % improvement = MEDIUM Viral Load. But if it affects the intestines, it is high.	Response <25%= HIGH and Persistent Viral Load	Initial Pulmonary Edema, Thrombophilia, Gastroent. Investig. Myocarditis/peric.		Moderate ARDS, Disseminated microthrombosis, Gastroenteritis, Myocarditis/peric., invest. Enceph.						Mod/Sev ARDS, SIRS, Thrombo-embolic disease, Myocarditis, investi. Heart-Renal failure, Enceph.
Therapeutic Plan ⇩ **Reduce the LOAD AND VIRAL REPLICATION** And cover Co-infections	IVERMECTIN: 0.4 mg. per Kg. of weight x dose a day, after lunch or dinner for 3 to 4 days. If you have a fever over 38°C for more than 12 hrs or semiliquid stool, add the 2nd dose in the day. Additional Hydration: 1-2 lt./day. Nasal Washes: 3-4 times /d. with a 10 ml syringe with 1 glass of water with 1/2 teaspoon of salt.	IVERMECTIN: 0.4 mg. x Kg. x doses, after breakfast and dinner for 4 to 7 days. If there is fever + than 24 h., and/or diarrhea, give: NIFUROXAZIDE 200 mg. + ATAPULGITE 350mg: 2 TB (400 mg) ev/ 12 or ev/ 8 h. x 4 to 8 days. according to Severity. If you weigh more than 90kg. and it is moderate to give 600mg. ev/8h FAMOTIDINE 60mg at 10 pm x 7-14 d., or RANITIDINE 300 mg at 10 pm x 7-14 d.	Add: NITAZOXANIDE: TB 500 mg ev/12h x 6 d. Ev/8h if you weigh is > 80 kg. BROMHEXINE: FCO. 8 mg (5ml) every 8 h x 6-7 d. • *If there is no diarrhea give:* NIFUROXAZIDE without Atapulgite: TB 400mg ev/ 8h x 6-9 days If fever persists, increase dose IVM and give: DOXYCYCLINE 100mg ev/12h x 6 d. or AZITRO	IVERMECTIN: 0.4 mg x Kg. of weight for dose, 3 times a day (br/ lun, dinn). Take up to 2 to 3 days after you have no symptoms. SPIRONOLACTONE TB 25 or 100mg. 100 mg/day, for 8 to 14 d. FLUVOXAMINE TB 100mg: 50mg 1st day, then 100mg/day x 12d In men: + 1 of following Alternatives: DUTASTERIDE 0.5mg/day, or BICALUTAMIDE 150mg/d; x 7-14 d. or HCQ: Nebulize* grind 200mg. of 1 TB, pour in 8ml. of distilled water, or boiled cold x 20 min. c/ 12h x 3d. *For Pulmonary Edema, put in Prone or Mohammedan or Left Lateral position. Restrict liquids, salt, do not give Sodium Chloride (yes Dextrose 5%).*		If there is fever, investig. Coinfection Alte. Oral: CEFIXIME 400, LEVO 750, MOXIFLOXACIN 400. IV: CEFTRIAXONE 2gr., CEFIPIME, MEROPENEN					1) IVERMECTIN: 0.4mg x Kg x dose, 3-4 times a day. See tolerance. 2) NIFUROXAZIDE 200mg 2TB ev/ 6h x 6-9 d. >90 kg give 3TB e/ 8 h 3) NITAZOXANIDE TB 500 mg ev/ 8h. x 6-12 d. >90 kg give 3TB e/8h 4) SPIRONOLACTONE 100 mg every 12 hours x 6 days, then 100 mg a day for 8 more days. 5) ANTIBIOTICS for aggreg. infecti. 6) ENOXAPARIN AMP SC 40mg. DOSE FOR CRITICAL CASES: If the Sat. O2 drops to less than 82%: give 0.5 mg. x kg. of weight every 8 hours x 2 to 3 days until recovered the Sat. O2 > 82% and changed to every 12 hours. 7) CYPROHEPTADINE start with 0.4 mg/kg/day, divide into doses every 8 h x 3 d. Then 0.2 mg/kg. 8) FIBRINOLYTICS: EV or VO.
Gargle: 4-5 times a day. Mix 10 ml of cold boiled water with 5 ml of Hydrogen peroxide of 10 volumes. Or w/0.05% Cetylpyridinium Chloride, 10ml undiluted. Give IVERMECTIN to Contacts: 0.4 mg for Kg of weight for 3 continued days. In Men aged over 70 years give 5 days. In Caregivers give 6 continued days.												
Reduce PLATELET HYPERACTIVITY and Thrombophilia	ACETYLSALICYLIC ACID (ASA) 300-500mg 1 time on the 1st day. Ambulation at home, change position every half hour during the day, avoid crossing the legs, flexion and extension exercises.	ASA TB, 200 to 300mg per day (100 mg after meals) x 7-12 days. If you weigh more than 90 kg give 300-600 mg a day, in 2 or 3 parts (after meals) x 7 to 12 days. *They are alternatives, or they can be added to ASA:* -DIPYRIDAMOLE 75mg, 1 TB 2-4 times/day, away from food. - CLOPIDOGREL TB 75 mg, 37.5 to 75 mg a day.	ENOXAPARIN AMP, SC - In <75 Kg: 40 mg every 24 h. - In >75 Kg: 60 mg every 24 h. LUMBROKINASE TB 20 mg, 4/d CURCUMA TB 500mg, 1/d x 14d OMEGA 3: TB 1000mg, 1/d. x14d.		ENOXAPARIN AMP SC 40 mg. Give: 0.5 mg/kg ev/12 h. If Sat.O2 drops below 85% give 0.5 ev/ 8 h Alternatives: HEPARIN AMP. Or: AAS 600 mg/d + LUMBROKINASE 80 mg/d. + CÚRCUMA 1,000 mg/d.					
Treat: INCREASE NUTRIENT REQUIREMENT, OXIDATIVE STRESS, LYMPHOPENIA and IMMUNE DYSFUNCTION	Avoid: coffee, alcohol; nuts, peanuts, almonds, pecans; orange, lemon, tangerine, banana, elderberry, chocolate; seeds, oats, wheat, corn; chili pepper; tomato; cold cuts, fish/seaf. Consume more: turkey, chicken, egg, beef; mango; potato, quinoa; yoghurt Do not use PARACETAMOL. Only if the fever is> 38.5°C give antipyretics	ZINC: 150-300mg x day x 12 d. Away from food (11 am and / or 4 pm) and dairy. Vit. D:30,-90,000 IU/d. x 6d. or 300,000/1d. Vit. C: 2 gr every 12 hours x 6 to 12 days Vit. A: 75,-100,000 IU x day x 3 d., do not take x 4 days and repeat x 3 d. the same. Sodium Bicarbonate: 1 sachet of Andrews Salt or 1/2 teaspoon of Baking Soda in a glass of water at 11am and 10pm x 3 days.	COLCHICINE TB 0.5 mg, 1 ev/12 h. x 15 d. If you weigh >75 kg: give 2 TB in the morning. N-ACETYL CYSTEINE 600 mg. sachet or TB. 1 sachet dissolved PO ev/ 6-8 h x 6 to 10 d. CYCLESONIDE or BUDENOSIDE: 2 inhalati. in the morning, noon and afternoon x 10 d. LYSINE 2 TB 500mg to 11am and 5pm x 14d. NIACIN (B3) TB 500 mg, 2 to 3 a day x 6-8 d.		QUERCETINE 500mg, 1-2 e/12h. 7d. VIT. C AMP or TB. 50mg/kg. of weight. EV or PO ev/ 8 or 12 h x 3-6 d VIT.B12 TB 3000 mcg/day X 8-12 d. THYAMINE TB 300 mg/day x 8-12 d. MELATONIN TB, before sleeping. Increase from 3, to 6 and to 10mg. SELENIUM TB 200mcg 2-3/d. x 30d					DEXAMETHASONE 4 mg. TB or AMP: 6 to 8 mg. x day x 3 - 8 d, or METHYLPREDNISOL. 125mg x 3d or CYCLOSPORIN: 6 to 10 mg/kg/d. in 2 doses, x 4-7 d., accord. resp. INMUNOGLOBULIN (IGIV) AMP 400 mg/kg/d slow infusión. x 3d. Use High Flow Nasal Cannula HFNC

* When nebulizing, take into account that aerosols will be generated, which increases the risk of contagion to other people. When doing it at home, teach the patient how to turn off the nebulization, and that there is no other person in the environment while nebulizing.

Prevention Protocols

I-MASK+

PREVENTION & EARLY OUTPATIENT TREATMENT PROTOCOL FOR COVID-19

PREVENTION PROTOCOL

Ivermectin[1]	**Chronic Prevention** 0.2 mg/kg per dose (take with or after a meal) — twice a week for as long as disease risk is elevated in your community **Post COVID-19 Exposure Prevention**[2] 0.4 mg/kg per dose (take with or after a meal) — one dose today, repeat after 48 hours
Vitamin D3	1,000–3,000 IU/day
Vitamin C	500–1,000 mg twice a day
Quercetin	250 mg/day
Zinc	30–40 mg/day (elemental zinc)
Melatonin	6 mg before bedtime (causes drowsiness)
Gargle mouthwash	2 x daily – gargle (do not swallow) antiseptic mouthwash with cetylpyridinium chloride (e.g. Scope™, Act™, Crest™), Listerine™ with essential oils, or povidone/iodine 1% solution as alternative.

EARLY OUTPATIENT PROTOCOL[3]

Ivermectin[1]	0.4–0.6 mg/kg per dose (take with or after a meal) — one dose daily, take for 5 days or until recovered Use upper dose range if: 1) in regions with aggressive variants (e.g. "Delta" variant); 2) treatment started on or after day 5 of symptoms or in pulmonary phase; or 3) multiple comorbidities/risk factors.
Fluvoxamine[4]	50 mg twice daily for 10–14 days Add to ivermectin if: 1) minimal response after 2 days of ivermectin; 2) in regions with more aggressive variants; 3) treatment started on or after day 5 of symptoms or in pulmonary phase; or 4) numerous comorbidities/risk factors. Avoid if patient is already on an SSRI.
Nasal/oral rinse	3 x daily – gargle (do not swallow) antiseptic mouthwash with cetylpyridinium chloride (e.g. Scope™, Act™, Crest™), Listerine™ with essential oils, or povidone/iodine 1% solution as alternative. Nasal rinse instructions below.[5]
Vitamin D3	4,000 IU/day
Vitamin C	500–1,000 mg twice a day
Quercetin	250 mg twice a day
Zinc	100 mg/day (elemental zinc)
Melatonin	10 mg before bedtime (causes drowsiness)
Aspirin	325 mg/day (unless contraindicated)
Pulse Oximeter	Monitoring of oxygen saturation is recommended (for instructions see page 2)

[1] The dosing may be updated as further scientific studies emerge. The safety of ivermectin in pregnancy has not been definitively established. Use in the 1st trimester should be discussed with your doctor.

[2] To use if a household member is COVID-19 positive, or you have prolonged exposure to a COVID-19 positive patient without wearing a mask

[3] For late phase — hospitalized patients — see the FLCCC's MATH+ Hospital Treatment Protocol for COVID-19 on www.flccc.net

[4] Some individuals who are prescribed fluvoxamine experience acute anxiety which needs to be carefully monitored for and treated by the prescribing clinician to prevent rare escalation to suicidal or violent behavior.

[5] Nasal rinse – 3 x daily. Use 10% povidone/iodine wound wash. Take 1 ml (1/4 tsp) mix with 9 ml saline solution (2 tsp). Use nasal irrigation bottle or syringe.

Please regard our **disclaimer** and further information on page 2 of this document.

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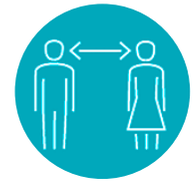
Behavioral Prevention

WEAR MASKS

Wear a cloth, surgical, or N95 mask when in confined, poorly ventilated, crowded indoor spaces with non-household members.



KEEP DISTANCE

Until the end of the COVID-19 crisis, we recommend keeping a minimum distance of approx. 2 m / 6 feet in public from people who are not from your own household.

WASH HANDS

We recommend, after a stay during and after outings from home (shopping, subway etc.), a thorough hand cleaning (20–30 sec. with soap), or also to use a hand disinfectant in between.

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I-MASK+
PREVENTION & EARLY OUTPATIENT TREATMENT PROTOCOL FOR COVID-19

IVERMECTIN

Summary of the Clinical Trials Evidence for Ivermectin in COVID-19

Ivermectin, an anti-parasitic medicine whose discovery won the Nobel Prize in 2015, has proven, highly potent, anti-viral and anti-inflammatory properties in laboratory studies. In the past 4 months, numerous, controlled clinical trials from multiple centers and countries worldwide are reporting consistent, large improvements in COVID-19 patient outcomes when treated with ivermectin.

Our comprehensive scientific review of these referenced trials on ivermectin can be found on www.flccc.net/flccc-ivermectin-in-the-prophylaxis-and-treatment-of-covid-19/

For a quick overview, a One-page Summary of our review on ivermectin can be found on www.flccc.net/flccc-ivermectin-summary

Body weight conversion (kg/lb) for ivermectin dose in prevention and treatment of COVID-19

Body weight **Conversion (1 kg ≈ 2.2 lbs)** (doses calculated per upper end of weight range)		**Dose** **0.2 mg/kg ≈ 0.09 mg/lb** (Each tablet = 3 mg; doses rounded to nearest half tablet above)	
70–90 lb	32–40 kg	8 mg	(3 tablets = 9 mg)
91–110 lb	41–50 kg	10 mg	(3.5 tablets)
111–130 lb	51–59 kg	12 mg	(4 tablets)
131–150 lb	60–68 kg	13.5 mg	(4.5 tablets)
151–170 lb	69–77 kg	15 mg	(5 tablets)
171–190 lb	78–86 kg	16 mg	(5.5 tablets)
191–210 lb	87–95 kg	18 mg	(6 tablets)
211–230 lb	96–104 kg	20 mg	(7 tablets = 21 mg)
231–250 lb	105–113 kg	22 mg	(7.5 tablets=22.5 mg)
251–270 lb	114–122 kg	24 mg	(8 tablets)
271–290 lb	123–131 kg	26 mg	(9 tablets = 27 mg)
291–310 lb	132–140 kg	28 mg	(9.5 tablets=28.5 mg)

Pulse Oximeter (usage instructions)

In symptomatic patients, monitoring with home pulse oximetry is recommended (due to asymptomatic hypoxia). The limitations of home pulse oximeters should be recognized, and validated devices are preferred. Multiple readings should be taken over the course of the day, and a downward trend should be regarded as ominous. Baseline or ambulatory desaturation < 94% should prompt hospital admission. The following guidance is suggested:

- Use the index or middle finger; avoid the toes or ear lobe.
- Only accept values associated with a strong pulse signal.
- Observe readings for 30–60 seconds to identify the most common value.
- Remove nail polish from the finger on which measurements are made.
- Warm cold extremities prior to measurement.

DISCLAIMER

*The **I-Mask+ Prevention & Early Outpatient Treatment Protocol for COVID-19** and the **MATH+ Hospital Treatment Protocol for COVID-19** are solely for educational purposes regarding potentially beneficial therapies for COVID-19. Never disregard professional medical advice because of something you have read on our website and releases. It is not intended to be a substitute for professional medical advice, diagnosis, or treatment in regards to any patient. Treatment for an individual patient should rely on the judgement of your physician or other qualified health provider. Always seek their advice with any questions you may have regarding your health or medical condition.*

For an overview of the developments in prevention and treatment of COVID-19, please visit flccc.net/covid-19-protocols

Please check our homepage regularly for updates of our COVID-19 Protocols. New medications may be added and/or dose changes to existing medications may be made as further scientific studies emerge!

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Zelenko Covid-19 Prophylaxis Protocol

Prophylaxis is an action taken to prevent or protect against a specified disease. Greek in origin, from the word "phylax", meaning "to guard" and "watching."

Low Risk Patients

Young healthy people do not need prophylaxis against Covid 19. In young and healthy people, this infection causes mild cold-like symptoms. It is advantageous for these patients to be exposed to Covid-19, build up their antibodies and have their immune system clear the virus. This will facilitate the development of herd immunity and help prevent future Covid-19 pandemics. However, if these patients desire prophylaxis against Covid-19, then they should take the protocol noted below.

Moderate Risk Patients

Patients from this category are healthy but have high potential viral-load exposure. This group includes medical personnel, caregivers of high-risk patients, people who use public transportation, first responders and other essential personnel who are crucial to the continued functioning of society. These patients should be encouraged to take prophylaxis against Covid-19 in accordance with the protocol noted below.

High Risk Patients

Patients are considered high risk if they are over the age of 45, or if they are younger than 45 but they have comorbidities, that is, they have other health conditions that put them at risk. These patients have between a 5 to 10% mortality rate if they are infected with Covid-19. These patients should be strongly encouraged to take prophylaxis against Covid-19 in accordance with the protocol noted below.

Protocol for Low and Moderate Risk Patients:

Elemental Zinc 25mg 1 time a day Vitamin D3 5000iu 1 time a day Vitamin C 1000mg 1 time a day Quercetin 500mg 1 time a day until a safe and efficacious vaccine becomes available If Quercetin is unavailable, then use Epigallocatechin-gallate (EGCG) 400mg 1 time a day

Protocol for High Risk Patients:

Elemental Zinc 25mg once a day Vitamin D3 5000iu 1 time a day Hydroxychloroquine (HCQ) 200mg 1 time a day for 5 days, then 1 time a week until a safe and efficacious vaccine becomes available If HCQ is unavailable, then use the Protocol for Low and Moderate Risk Patients.

1. Https://Www.Ncbi.Nlm.Nih.Gov/Pmc/Articles/PMC7365891/

2. Https://Www.Ncbi.Nlm.Nih.Gov/Pmc/Articles/PMC7318306/

3. Https://Pubs.Acs.Org/Doi/10.1021/Jf5014633

4. Https://Www.Preprints.Org/Manuscript/202007.0025/V1

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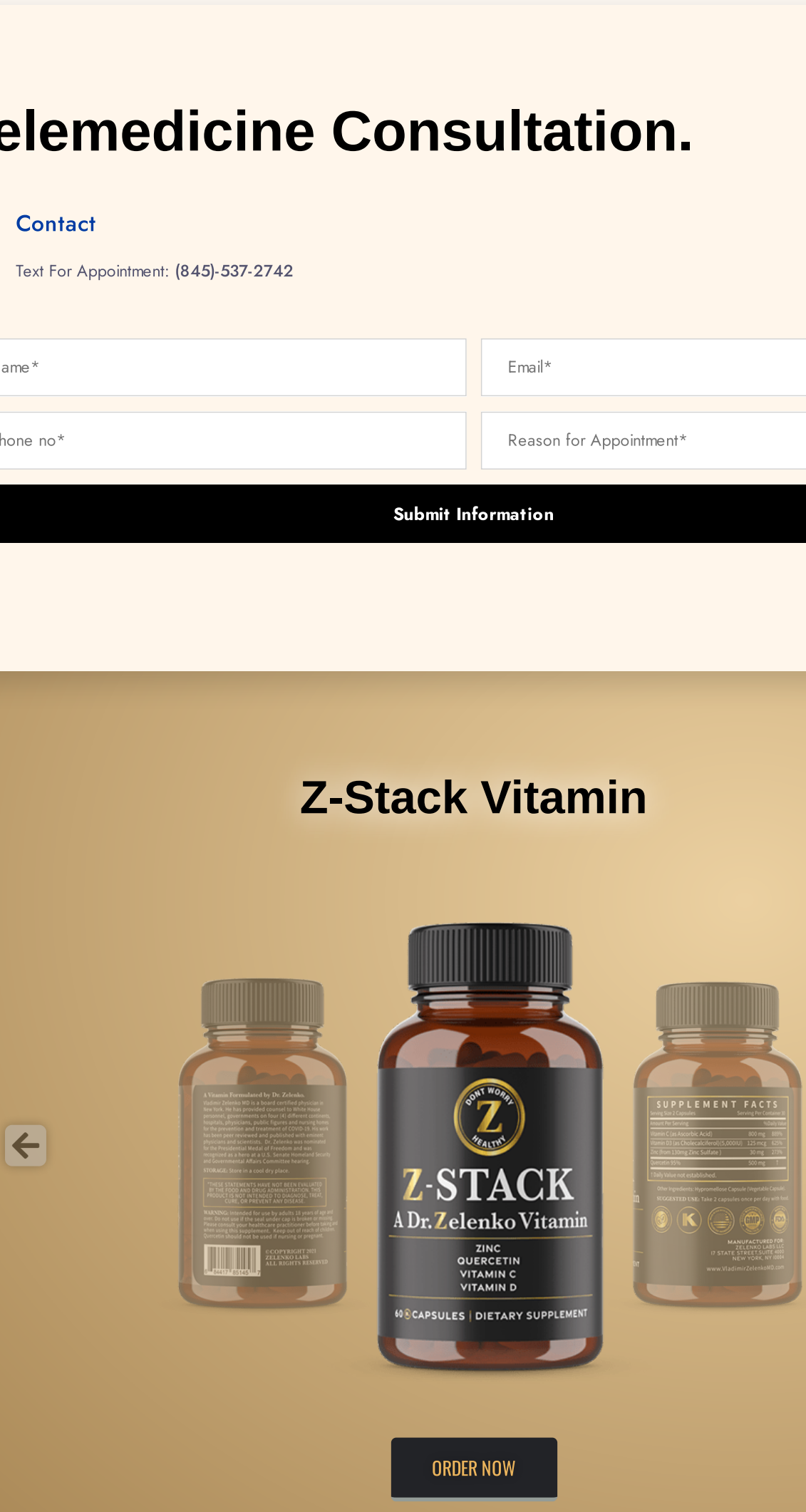

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About Dr. Zelenko

Conservapedia

Advisory on the use of hydroxy–chloroquine as prophylaxis for SARS-CoV-2 infection

The **National Task force for COVID-19** constituted by Indian Council of Medical Research recommends the use of hydroxy– chloroquine for prophylaxis of SARS-CoV-2 infection for high risk population. Copy is annexed.

The Advisory provides for placing the following high risk population under chemoprophylaxis with hydroxy chloroquine:

- Asymptomatic Healthcare Workers involved in the care of suspected or confirmed cases of COVID-19
- Asymptomatic household contacts of laboratory confirmed cases

The protocol recommended by the National Task force has been approved by the Drug Controller General of India for restricted use in emergency situations.

While following the above recommendations, States should take note of the following:

1) **The placing of healthcare workers under chemoprophylaxis should not instill a sense of false security.** They should follow all prescribed public health measures such as frequent washing of hands, respiratory etiquettes, keeping a distance of minimum 1m and use of Personal protective equipment (wherever applicable).
2) They should self-monitor their health and report to health authorities immediately in the event of them becoming symptomatic.
3) The high risk contacts of a positive case placed under chemo prophylaxis, **should remain in home quarantine while on prophylactic therapy.**
4) As recommended by the said Task Force, the drug should only be given on the prescription of a registered medical practitioner. The contraindications mentioned in the recommendations should strictly be followed.
5) Apart from the symptoms of COVID-19 (fever, cough, breathing difficulty), if the person on chemo-prophylaxis develops any other symptoms, he should immediately seek medical treatment of the medical practitioner who has prescribed the chemoprophylaxis.

It is reiterated that the intake of the above medicine should not in still sense of false security.

ANNEXURE I

सत्यमेव जयते

प्रोफेसर (डा.) बलराम भार्गव, पदम श्री

एमडी, डीएम, एफआरसीपी (जी.), एफआरसीपी (ई.), एफएसीसी,
एफएएचए, एफएएमएस, एफएनएएस, एफएएससी, एफ.एन.ए., डी.एस.सी.

सचिव, भारत सरकार
स्वास्थ्य अनुसंधान विभाग
स्वास्थ्य एवं परिवार कल्याण मंत्रालय एवं
महानिदेशक, आई सी एम आर

Prof. (Dr.) Balram Bhargava, Padma Shri

MD, DM, FRCP (Glasg.), FRCP (Edin.),
FACC, FAHA, FAMS, FNASc, FASc, FNA, DSc

Secretary to the Government of India
Department of Health Research
Ministry of Health & Family Welfare &
Director-General, ICMR

भारतीय आयुर्विज्ञान अनुसंधान परिषद
स्वास्थ्य अनुसंधान विभाग
स्वास्थ्य एवं परिवार कल्याण मंत्रालय
भारत सरकार
वी. रामलिंगस्वामी भवन, अंसारी नगर
नई दिल्ली - 110 029

Indian Council of Medical Research
Department of Health Research
Ministry of Health & Family Welfare
Government of India
V. Ramalingaswami Bhawan, Ansari Nagar
New Delhi - 110 029

D.O.No.VIR/4/2020/ECD-I
22nd March, 2020

Dear Madam

Please find attached the final recommendation of the National Taskforce for COVID-19 for the use of hydroxychloroquine as prophylaxis. This recommendation supersedes the earlier recommendation dated 21.3.2020

With regards

Yours sincerely,

Balram Bhargava

(Balram Bhargava)

Encl: As above

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Secretary (Health & Family Welfare)
Ministry of Health & Family Welfare,
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Recommendation for empiric use of hydroxy-chloroquine for prophylaxis of SARS-CoV-2 infection

Background:

Hydroxy-chloroquine is found to be effective against coronavirus in laboratory studies and in-vivo studies. Its use in prophylaxis is derived from available evidence of benefit as treatment and supported by pre-clinical data. The following recommendation for the use of hydroxy-chloroquine as a prophylactic agent against SARS-CoV-2 infection is based on these considerations, as well as risk-benefit consideration, under exceptional circumstances that call for the protection of high-risk individuals.

The National Taskforce for COVID-19 recommends the use of hydroxy-chloroquine for prophylaxis of SARS-CoV-2 infection for selected individuals as follows:

Eligible individuals:

- Asymptomatic healthcare workers involved in the care of suspected or confirmed cases of COVID-19
- Asymptomatic household contacts of laboratory confirmed cases

Dose:

- Asymptomatic healthcare workers involved in the care of suspected or confirmed cases of COVID-19: *400 mg twice a day on Day 1, followed by 400 mg once weekly for next 7 weeks; to be taken with meals*
- Asymptomatic household contacts of laboratory confirmed cases: *400 mg twice a day on Day 1, followed by 400 mg once weekly for next 3 weeks; to be taken with meals*

Exclusion/contraindications:

- The drug is not recommended for prophylaxis in children under 15 years of age.
- The drug is contraindicated in persons with known case of retinopathy, known hypersensitivity to hydroxychloroquine, 4-aminoquinoline compounds

Key considerations:

- The drug has to be given only on the prescription of a registered medical practitioner.
- Advised to consult with a physician for any adverse event or potential drug interaction before initiation of medication
- The prophylactic use of hydroxychloroquine to be coupled with the pharmacovigilance for adverse drug reactions through self-reporting using the Pharmacovigilance Program of India (PvPI) helpline/app.
- If anyone becomes symptomatic while on prophylaxis he/she should immediately contact the health facility, get tested as per national guidelines and follow the standard treatment protocol.
- All asymptomatic contacts of laboratory confirmed cases should remain in home quarantine as per the national guidelines, even if they are on prophylactic therapy.
- Simultaneously, proof of concept and pharmacokinetics studies be taken up expeditiously. Findings from these studies and other new evidence will guide any change in the recommendation.

I-MASS

Prevention & At Home Treatment Mass Distribution Protocol for COVID-19

Prevention Protocol

For adults > 18 years and >40 kg/90 lbs

Ivermectin	18 mg – start treatment with one dose on day 1, and then repeat weekly (every 7 days)
Vitamin D3	2000 IU (50 mcg) daily
Multivitamin	1 tablet daily
Digital thermometer	optional (to watch the body temperature)

Early At Home Treatment Protocol

For adults > 18 years and >40 kg/90 lbs

Ivermectin	24 mg – daily for 5 days In the setting of poor clinical response, advanced disease, or obesity, higher doses should be used (target 0.4–0.6 mg/kg)
Melatonin	6 mg at night for 5 days
Aspirin (ASA)	80 mg/day (unless contraindicated)
Anti-septic mouth wash	Three times daily (gargle do not swallow); if available

Post-exposure Prevention

For household or close contacts of a COVID-19 patient

Ivermectin	18 mg – repeat dose in 48 hours

A cooperation of the FLCCC Alliance with

BIRD British *Ivermectin* Recommendation Development

www.bird-group.org

The I-MASS protocol has been developed for Mass Distribution during regional outbreaks or in resource poor countries to lessen the impact and spread of COVID-19.

Ivermectin

Ivermectin has been found to have highly potent anti-viral and anti-inflammatory properties and many randomized trials and data from countries that have adopted ivermectin all show large reductions in time to recovery, hospitalizations and death. The FLCCC review paper summarizing this data has been published in the *American Journal of Therapeutics* here.

Further supportive information can also be found here: www.flccc.net/ivermectin-in-covid-19/

Disclaimer: The safety of ivermectin in pregnancy has not been established. Particularly the use in the 1st trimester should be discussed with your doctor beforehand.

Further treatment protocols for COVID-19, including for hospitalized patients, can be found at flccc.net/covid-19-protocols/

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OTC Medicines & Nutraceuticals to Prevent/Reduce COVID Post-Vaccination Side Effects

These recommendations are based on the clinical experience of COVID-expert doctors surveyed. The recommendations are designed to address two concerns:

1. Prevention or reduction of side effects and adverse events that may in some cases be severe. The schedule for each nutraceutical or medicine is designed to cover the time when various of the side effects have been reported.
2. "Breakthrough" COVID infection is being reported during the approximately two weeks before immunity from the vaccine starts. The recommended antivirals and vitamin D help protect against these shortly-after-vaccine COVID infections. Vitamin D also helps protect against vaccine side effects.

   All the therapeutics listed are available over the counter without prescription. However, for those with access to them, adding ivermectin or hydroxychloroquine enhances the anti-COVID protection.

   Ivermectin for protection against COVID infection is recommended at a dosage of 0.2 mg/kilogram of body weight (typically around 12 - 18 mg/dose). An often cited protocol is to take one dose, then after 48 hours take a second dose. Then take once per week.

   Hydroxychloroquine for protection against COVID infection is often recommended at 200 mg once a day for 5 days, then 200 - 400mg one time a week.

- **Aspirin (anti-thrombotic)**

  325 mg/day for 4 weeks beginning the day before vaccination.

- **Ibuprofen (anti-inflammatory)**

  Two 200 mg caplets 3 times/day the day before, day of and day after vaccination. Continue as needed if symptomatic (fever, muscle aches, headache, etc.)

- **Loratadine (Claritin or generic equivalent; H1 blocker, anti-inflammatory)**

  10 mg/day the day before, day of and day after vaccination.

- **Famotidine (Pepcid or generic equivalent; H2 blocker, anti-inflammatory)**

  20 mg twice per day the day before, day of and day after vaccination.

- **Vitamin D3 (potent anti-inflammatory effects at sufficient dosage; anti-viral immune enhancement)**

  One dose of 50,000 IU five to seven days before vaccination (serum levels peak on average at 7 days),
  Then daily 15,000 IU until 5 days after vaccination,
  Then continue with maintenance dosage of 5,000 - 10,000 IU/day.

For extra protection against breakthrough COVID infection during the approximately two-week window before immunity starts:

- **Zinc (anti-viral)**

  50 mg/day started as far ahead of vaccination as possible and continued three weeks or indefinitely.

- **Quercetin (zinc ionophore, to enhance zinc anti-viral effect; anti-inflammatory; anti-thrombotic)**

  250 mg twice per day for three weeks starting the day before vaccination.

- **Vitamin C (anti-viral; anti-inflammatory)**

  3,000 mg/day started as far ahead of vaccination as possible and continued three weeks or indefinitely.

DISCLAIMER: This information is for educational purposes only. It is not intended to serve as a substitute for diagnosis, treatment, or advice from a qualified, licensed medical professional. Any treatment you undertake should be discussed with your physician or other licensed medical professional.

UNCATEGORIZED

Long COVID Protocols

I-RECOVER

Management Protocol for Long Haul COVID-19 Syndrome (LHCS)

The approach outlined below is a consensus protocol based on a collaboration led by Dr. Mobeen Syed ("Dr. Been"), Dr. Ram Yogendra, Dr. Bruce Patterson, Dr. Tina Peers, and the FLCCC Alliance. Given the lack of clinical treatment trials of Long Haul COVID-19 Syndrome, these recommendations are based on the pathophysiologic mechanisms of COVID-19 and post-viral illnesses along with our collective experience observing profound and sustained clinical responses achieved with the treatment approaches below.

This protocol has also been used to treat **post-vaccine inflammatory syndromes** with similar success. As with all FLCCC Alliance protocols, the components, doses, and durations will evolve as more clinical data accumulates. For the most up-to-date information on optional treatments, go to: flccc.net/flccc-protocols-a-guide-to-the-management-of-covid-19 (see LHCS section).

Initial therapy of Long Haul COVID-19 Syndrome:

IVERMECTIN

0.2–0.4 mg/kg dose – once daily with meals* for 3–5 days (higher doses are sometimes needed in anosmia).

* Take on empty stomach if presenting with nausea/diarrhea/anorexia.

After 3–5 days, change to once or twice weekly depending on the time to symptom recurrence/persistence.

Discontinue after 2–4 weeks if all symptoms have resolved and do not recur.

Relative Contraindications:
- Patients on Warfarin require close monitoring and dose adjustment.
- Pregnant or lactating women require a more in-depth risk/benefit assessment.

If not all symptoms resolve with ivermectin:

CORTICOSTEROID THERAPY

A tapering dose of **prednisone** as follows:

1. 0.5 mg/kg daily for 5 days
2. 0.25 mg/kg daily for 5 days
3. 0.12 mg/kg daily for 5 days

Take in morning to lessen impact on sleep.

Side effects may include: Increased appetite, mood changes, insomnia, raised blood glucose, dyspepsia.

For use in all patients:

MACROPHAGE/MONOCYTE REPOLARIZATION THERAPY

- Vitamin C — 500 mg twice daily
- Omega-3 Fatty Acids — 4 gm/daily (Vascepa, Lovaza, or DHA/EPA)
- Atorvastatin — 40 mg daily
- Melatonin — 2–10 mg nightly, start with low dose, increase as tolerated in absence of sleep disturbance.

Additional Supplement

- Vitamin D3 — 2,000–4,000 IU daily

DHA Docosahexaenoic acid
EPA eicosapentaenoic acid
IU international units
mg/kg dose in mg per kg body weight

If presenting with neurologic symptoms, i.e. poor concentration, forgetfulness, mood disturbance:

FLUVOXAMINE

50 mg – twice daily for 15 days.

Reduce dose or discontinue if side effects develop. Doses as low as 9 mg twice daily have shown efficacy.

Monitor closely as some patients may respond poorly. Some individuals can experience acute anxiety; monitor and treat carefully to prevent rare escalation to suicidal or violent behavior.

If presenting with shortness of breath or low oxygen levels:

PULMONARY EVALUATION

Refer to lung specialist if available, otherwise perform chest imaging (CT preferred) to assess for secondary organizing Pneumonia (OP).

If findings consistent with secondary OP found, initiate **Corticosteroid Therapy** as below. May need to repeat or prolong course of treatment if symptoms or oxygen needs persist.

CT computed tomography scan
OP organizing pneumonia

If symptoms still unresolved or recur after ivermectin and corticosteroid regimens:

TREATMENT OF SUSPECTED MAST CELL ACTIVATION

Choose a Type I and a Type II antihistamine along with a mast cell stabilizer – for example, Loratadine, Famotidine, and Rupatadine. Change medicines if poor response. United States FDA approved doses of many of the below medicines are once daily but can use up to three times daily with caution and close monitoring if poor response or side effects.

First-line Therapy

- Low histamine diet
- *Type I antihistamines:* Loratadine 10 mg, or Cetirizine 10 mg, or Fexofenadine 180 mg – three times daily as tolerated.
- *Type II antihistamines:* Famotidine 20 mg, or Nizatidine 150 mg – twice daily as tolerated.
- *Mast cells stabilizers:*
  - Rupatadine 10 mg – once daily, or Ketotifen 1 mg – once daily at night (increase as tolerated).
  - May add: Sodium Cromoglycate 200 mg – three times daily (increase slowly), or Quercetin 500 mg – three times daily.

Second-line Therapy

- Montelukast 10 mg (beware depression in some) – once daily.
- Low Dose Naltrexone (LDN) – start with 0.5 mg daily, increasing by 0.5 mg weekly up to 4.5 mg daily. Avoid if on opiates.
- Diazepam 0.5–1 mg twice daily.
- SSRIs.

I-RECOVER

Management Protocol for Long Haul COVID-19 Syndrome (LHCS)

The Long Haul COVID-19 Syndrome (also "Post-COVID-19 Syndrome")

Excerpt from the "Guide to the Management of COVID-19" by Dr. Paul Marik / FLCCC Alliance
flccc.net/flccc-protocols-a-guide-to-the-management-of-covid-19

The Long Haul COVID-19 Syndrome (LHCS) is characterized by prolonged malaise, headaches, generalized fatigue, sleep difficulties, hair loss, smell disorder, decreased appetite, painful joints, dyspnea, chest pain and cognitive dysfunction [400-411] Up to 80% of patients experience prolonged illness after COVID-19. LHCS is not only seen after the COVID-19 infection but it is being observed in some people that have received vaccines (likely due to monocyte activation by the spike protein from the vaccine). LHCS may persistent for months after the acute infection and almost half of patients report reduced quality of life. Patients may suffer prolonged neuropsychological symptoms, including multiple domains of cognition. [409,412] A puzzling feature of LHCS is that it is not predicted by initial disease severity; post-COVID-19 frequently affects mild-to-moderate cases and younger adults that did not require respiratory support or intensive care. [411] The symptom set of LHCS is in majority of the cases very similar to the chronic inflammatory response syndrome (CIRS) / myalgic encephalomyelitis / chronic fatigue syndrome. [411] An important differentiating factor from CIRS is the observation that LHCS continues to improve on its own albeit slowly in majority of the cases. Another important observation is that LHCS includes more young people compared to severe COVID-19 that affects older people or persons with comorbidities. Furthermore, the similarity between the mast cell activation syndrome and LHCS has been observed, and many consider post-COVID-19 to be a variant of the mast cell activation syndrome. [413]

The LHCS syndrome in highly heterogenous and likely results from a variety of pathogenetic mechanisms Furthermore, it is likely that delayed treatment (with ivermectin) in the early symptomatic phase will results in a high viral load which increase the risk and severity of LHCS. The following theories have been postulated to explain LHCS: [411]

1. Ongoing respiratory symptoms (SOB, cough, reduced effort tolerance) may be related to unresolved organizing pneumonia (activate pulmonary macrophages).
2. Monocyte activation syndrome. Persistence of viral debris in monocytes results in an ongoing immune response in an attempt by the immune system to clear the offending protein(s) and viral RNA fragments.
3. The neurological symptoms may be related micro- and/or macrovascular thrombotic disease which appears to be common in severe COVID-19 disease. [414] Brain MRIs' 3 months post-infection demonstrated micro-structural changes in 55% of patients. [415] In addition, features of encephalopathy may be related to encephalitis and auto-reactive brain antibodies [416] as well as severe cerebral vasoconstriction. [417] The brain microvasculature expresses ACE-2 receptors and SARS-CoV-2 "pseudovirons" may bind to the microvascular endothelium causing cerebral microvascular inflammation and clotting. [418].
4. An unmasking of mast cell activation syndrome (MCAS), or triggering of mast cell activation syndrome. Mast cells are present in the brain, especially in the median eminence of the hypothalamus, where they are located perivascularly close to nerve endings positive for corticotrophin releasing hormone. [419] Following stimulation, mast cells release proinflammatory mediators such as histamine, tryptase, chemokines and cytokines which may result in neurovascular inflammation. [419] The "brain-fog", cognitive impairment and general fatigue reported in long-COVID-19 may be due to mast cell related neurovascular inflammation.

Clinical signs and symptoms can be grouped in the following clusters. The reason for this grouping is to allow organ specific targeted therapy/individualized therapy.

1. Respiratory: shortness of breath, congestion, persistent cough, etc.
2. Neurological/psychiatric: brain fog, malaise, tiredness, headaches, migraines, depression, inability to focus/concentrate, altered cognition, insomnia, vertigo, panic attacks, tinnitus, anosmia, phantom smells, etc.
3. Musculoskeletal: myalgias, fatigue, weakness, joint pains, inability to exercise, post-exertional malaise, inability to perform normal activities of daily life (ADL's).
4. Cardiovascular: Palpitations, arrhythmias, Raynaud like syndrome, hypotension, and tachycardia on exertion.
5. Autonomic: Postural tachycardia syndrome (POTs), abnormal sweating.
6. GIT disturbance: Anorexia, diarrhea, bloating, vomiting, nausea, etc.
7. Dermatologic: Itching, rashes, dermatographia
8. Mucus membranes: Running nose, sneezing, Burning and itchy eyes.

Approach to Treatment

The treatment approach should be individualized according to the grouping of clinical signs and symptoms. However, in general, it is likely that patients who received inadequate antiviral treatment (ivermectin) during the acute symptomatic phase and inadequate anti-inflammatory/macrophage repolarization therapy (corticosteroids, statins, omega-3 fatty acids, fluvoxamine, ivermectin, etc) during the acute phase of COVID-19 are much more likely to develop the Post-COVID-19 Syndrome. In patients with ongoing respiratory symptoms chest imaging is suggested (preferably a chest CT scan). Those with unresolved pulmonary inflammation (organizing pneumonia) should be treated with a course of corticosteroids (prednisone) and closely followed. A CRP should be measured, and extended corticosteroids (titrated to the CRP) offered to these patients. Similar to patients who have recovered from septic shock, [420] a prolonged (many months) immune disturbance with elevated pro- and anti-inflammatory cyto-

I-RECOVER

Management Protocol for Long Haul COVID-19 Syndrome (LHCS)

kines may contribute to the LHCS. This is likely the consequence of monocyte activation syndrome and monocyte repolarization therapy is therefore indicated. In addition, a cytokine panel may allow targeted anti-inflammatory therapy (Maraviroc in patients with high CCR5 levels). It should be noted that much like omega-3 fatty acids, corticosteroids have been demonstrated to increase expression of pro-resolving lipids including Protectin D1 and Resolvin D4. [421] An unknown number of patients who have recovered from COVID-19 organizing pneumonia will develop pulmonary fibrosis with associated limitation of activity. Pulmonary function testing demonstrates a restrictive type pattern with decreased residual volume and DLCO. [406] These patients should be referred to a pulmonologist with expertise in pulmonary fibrosis. Anti-fibrotic therapy may have a role in these patients, [380-383] however additional data is required before this therapy can be more generally recommended. As discussed above, the serotonin receptor blocker cyproheptadine may reduce the risk of pulmonary fibrosis. [256]

References

256. Skurikhin EG, Andreeva TV, Khnelevskaya ES et al. Effect of antiserotonin drug on the development of lung fibrosis and blood system reactions after intratracheal administration of bleomycin. Bull Exp Biol Med 2012; 152:519-23.
380. Seifirad S. Pirfenidone: A novel hypothetical treatment for COVID-19. Medical Hypotheses 2020; 144:11005.
381. Saba A, Vaidya PJ, Chavhan VB et al. Combined pirfenidone, azithromycin and prednisolone in post-H1N1 ARDS pulmonary firbosis. Sarcoidosis Vasc Diffuse Lung Dis 2018; 35:85-90.
382. Spagnolo P, Balestro E, Aliberti S et al. Pulmonary fibrosis secondary to COVID-19: a call to arms? Lancet Resp Med 2020; 8:750-752.
383. George PM, Wells AU, Jenkins RG. Pulmonary fibrosis and COVID-19: the potential role for antibibrotic therapy. Lancet Resp Med 2020; 8:807-15.
400. Carfi A, Bernabei R, Landi F. Persistent symptoms in patients after acute COVID-19. JAMA 2020.
401. Prescott HC, Girard TD. Recovery from Severe COVID-19. Leveraging the lessons of survival from sepsis. JAMA 2020.
402. Greenhalgh T, Knight M, A'Court C et al. Management of post-acute COVID-19 in primary care. BMJ 2020.
403. Chopra V, Flanders SA, O'Malley M. Sixty-day outcomes among patients hospitalized with COVID-19. Ann Intern Med 2020.
404. Mandal S, Barnett J, Brill SE et al. 'Long-COVID': a cross-sectional study of persisting symptoms, biomarker and imaging abnormalities following hospitalization for COVID-19. Thorax 2020.
405. Michelen M, Manoharan L, Elkheir N et al. Characterising long-term COVID-19: a rapid living systematic review. medRxiv 2020.
406. Huang C, Huang L, Wang Y et al. 6-month consequences of COVID-19 in patients discharged feom hospital: a cohort study. Lancet 2021.
407. Logue JK, Franko NM, McCulloch DJ et al. Sequelae in adults at 6 months after COVID-19 infection. JAMA Network Open 2021; 4:e210830.
408. Janiri D, Carfi A, Kotzalidis GD et al. Posttraumatic stress disorder in patients after severe COVID-19 infection. JAMA Psychiatry 2021.
409. Voruz P, Allali G, Benzakour L et al. Long COVID neuropsychological deficits after severe, moderate or mild infection. medRxiv 2021.
410. Al-Aly Z, Xie Y, Bowe B. High-dimensional characterization of post-acute sequalae of COVID-19. Nature 2021.
411. Yong SJ. Long-haul COVID-19: Putative pathophysiology, risk factors, and treatments. medRxiv 2020.
412. Taquet M, Geddes JR, Husain M et al. 6-month neurological and psychiatric outcomes in 236 379 survivors of COVID-19: a retrospective cohort study using electronic health records. Lancet Psychiatry 2021.
413. Afrin LB, Weinstock LB, Molderings GJ. COVID-19 hyperinflammation and post-Covid-19 illness may be rooted in mast cell activation syndrome. Int J Infect DIs 2020.
414. Bryce C, Grimes Z, Pujadas E et al. Pathopysiology of SARS-CoV-2: targeting of endothelial cells renders a complex disease with thrombotic microangiopathy and aberrant immune response. The Mount Sinai COVID-19 autopsy experience. medRxiv 2020.
415. Lu Y, Li X, Geng D et al. Cerebral micro-structutal changes in COVID-19 patients - An MRI-based 3-month follow-up study. EClinicalMedicine 2020.
416. Franke C, Ferse C, Kreye J et al. High frequency of cerebrospinal fluid autoantibodies in COVID-19 patients with neurological symptoms. Brain,Behavior, and Immunity 2021.
417. Sirous R, Taghvaei R, Hellinger JC et al. COVID-19-associated encephalopathy with fulminant cerebral vasoconstriction: CT and MRI findings. Radiology Case Reports 2020; 15:2208-12.
418. Magro CM, Mulvey JJ, Laurence J et al. Docked severe acute respiratory syndrome coronavirus 2 proteins within the cutaneous and subcutaneous microvasculature and their role in the pathogenesis of severe coronavirus disease 2019. Human Pathology 2020; 106:106-16.
419. Theoharides TT, Cholevas C, Polyzoidis K et al. Long-COVID syndrome-associated brain fog and chemofog: Luteolin to the rescue. Biofactors 2021; 47:232-41.
420. Riche F. Protracted immune disorders at one year after ICU discharge in patients with septic shock. Crit Care 2018; 22:42.
421. Andreakos E, Papadaki M, Serhan CN. Dexamethasone, pro-resolving lipid mediators and resolution of inflammation in COVID-19. Allergy 2020.
422. COVID-19 rapid guideline: managing the long-term effects of COVID-19. www.nice.org.uk/guidance/ng188 . 2020. National Institute for Health and Care Excellence. 4-26-2021.
423. Sanabria-Mazo JP, Montero-Marin J, Feliu-Soler A et al. Mindfulness-based program plus amygdala and inusla retraining (MAIR) for the treatment of women with fibromyalgia: A pilot ramdomized controlled trial. J Clin Med 2020; 9:3246.
424. Theoharides TC. COVID-19, pulmonary mast cells, cytokine storms, and beneficial actions of luteolin. Biofactors 2020; 46:306-8.
425. Bawazeer MA, Theoharides TC. IL-33 stimulates human mast cell release of CCL5 and CCL2 via MAPK and NF-kB, inhibited by methoxyluteolin. Eur J Pharmacol 2019; 865:172760.
426. Weng Z, Patel AB, Panagiotidou S et al. The novel flavone tetramethoxyluteolin is a potent inhibitor of human mast cells. J Allergy Clin Immunol 2015; 135:1044-52.
427. Patel AB, Theoharides TC. Methoxyluteolin inhibits neuropeptide-stimulated proinflammatory mediator release via mTOR activation from human mast cells. J Pharmacol Exp Ther 2017; 361:462-71.
428. Calis Z, Mogulkoc R, Baltaci AK. The roles of flavonols/flavonoids in neurodegeneration and neuroinflammation. Mini Rev Med Chem 2020; 20:1475-88.

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The I-RECOVER protocol is borne of clinical experience only and thus is meant solely for educational purposes to health care providers regarding potentially beneficial empiric treatment approaches for Long Haul COVID-19 Syndrome. Never disregard professional medical advice because of something you have read on our website and releases. This is not intended to be a substitute for professional medical advice, diagnosis, or treatment in regards to any patient. Treatment for an individual patient is determined by many factors and thus should rely on the judgement of your physician or qualified health care provider. Always seek their advice with any questions you may have regarding your medical condition or health.

Please check our homepage www.flccc.net regularly for updates of our COVID-19 Protocols! – New medications may be added and/or dose changes to existing medications may be made as further scientific studies emerge!

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POST-ACUTE OR PROLONGED COVID-19: TREATMENT WITH IVERMECTIN FOR PATIENTS WITH PERSISTENT, OR POST-ACUTE SYMPTOMS

Aguirre-Chang, Gustavo; Castillo Saavedra, Eduardo; Yui Cerna, Manuel; Trujillo Figueredo, Aurora; Córdova Masías, José. Reseach Gate. July 11, 2020.
English translation copy edited by Madeline Oh

SUMMARY

INTRODUCTION: It is estimated that between 10 to 45% of people who become ill with COVID-19 will present with symptoms after the acute stage of the disease. These symptoms will persist for weeks, developing what is called Persistent or Post-Acute Symptoms of COVID- 19. There is no consensus, nor has there been a publication on specific and effective treatment for these cases. Knowledge is quite lacking as to its etiopathogenesis.

MATERIAL AND METHODS: 33 patients with Persistent or Post-Acute Symptoms of COVID-19, who were between weeks 4 and 12 from the onset of symptoms were enrolled in the present study. Patients whose main symptoms were musculoskeletal such as fatigue due to muscle weakness, diminished muscle strength and myalgia (muscle pain) were excluded. The following protocol was followed: in cases with mild symptoms, Ivermectin was administered at a dose of 0.2 mg per kilogram of body weight per day for 2 days. If patients still had symptoms after the 2 doses, 2 additional days of Ivermectin treatment were given at the same dose. For cases with moderate symptoms, a dose of 0.4 mg per kilogram of body weight was prescribed for 2 days, followed by 0.2 mg per kilogram of body weight for 2 additional days. If a patient continued to have symptoms after the fourth day of treatment, more doses of Ivermectin were indicated. Treatment then continued for additional days until either clinical improvement was observed, or there was no longer further clinical improvement with treatment.

RESULTS: 33 adult patients with Persistent or Post-Acute Symptoms of COVID-19 were treated with Ivermectin. In 94% of the 33 patients, clinical improvement to some degree (partial or total) was observed after 2 doses of Ivermectin. Total improvement (without any symptoms) was observed in 87.9% of the patients after the 2 daily doses of Ivermectin. In 12.1% of patients whose symptoms had not been completely resolved after the first 2 doses, additional doses of Ivermectin treatment were administered according to the protocol, and total clinical resolution of symptoms was observed in 94% of cases.

CONCLUSION: The result of the present study demonstrates that clinical improvement is observed in high percentage of patients with Persistent or Post-Acute Symptoms of COVID-19 who are treated with Ivermectin.
Given the high number of patients with Persistent Symptoms and a favorable clinical response seen after receiving this specific treatment, we recommend that additional clinical studies be carried out on the use of Ivermectin and other drugs to reduce and eliminate the viral load in these cases.

Key Words: Long hauler, Long COVID, COVID Long term, Persistent Symptoms, Long Term COVID, Persistent COVID-19, Post-acute COVID-19, Prolonged COVID-19, Subacute COVID-19, Chronic COVID-19, Ivermectin.

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Top Yale Doctor/Researcher: 'Ivermectin works,' including for long-haul COVID

Mary Beth Pfeiffer
March 22, 2021

11 Comments

Note that views expressed in this opinion article are the writer's personal views and not necessarily those of TrialSite.

A Yale University professor and renowned cancer researcher has pored over the COVID-19 literature and treated several dozen patients. He can remain silent no longer.

Dr. Alessandro Santin, a practicing oncologist and scientist who runs a large laboratory at Yale, believes firmly that ivermectin could vastly cut suffering from COVID-19. Santin joins a growing group of doctors committed to using the safe, generic drug both as an early home treatment to prevent hospitalization and alongside inpatient treatments like steroids and oxygen.

"The bottom line is that ivermectin works. I've seen that in my patients as well as treating my own family in Italy," Santin said in an interview, referring to his father, 88, who recently suffered a serious bout of COVID. "We must find a way to administer it on a large scale to a lot of people."

Santin's statements carry the prestige of a leadership position at Yale School of Medicine and the gravitas of a top uterine cancer researcher, who has authored more than 250 science journal articles and pioneered treatment, us...

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Mary Beth Pfeiffer

Mary Beth Pfeiffer, author of Lyme: The First Epidemic of Climate Change, has been an award-winning investigative journalist for three decades. A reporter who has specialized in social justice, environmental and health issues, she is also author of Crazy in America: The Hidden Tragedy of Our Criminalized Mentally Ill. The book is a critically acclaimed look at treatment of the mentally ill in prisons and jails in the United States. Pfeiffer is married to Dr. Robert Miraldi, whom she met when both were reporters at the Staten Island Advance. Miraldi, a Fulbright scholar and journalism professor, is author of Seymour Hersh: Scoop Artist. They have two children, four grandchildren and a Shih Tzu named Bushwick.

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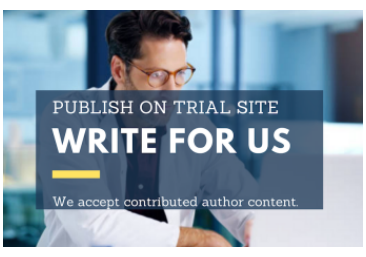

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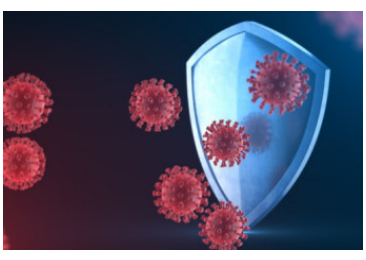

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How Do I Get COVID-19 Medication?

1 Click on the contact a physician button below. Fill out the form and pay $90. The physician will call you typically within 2-7 days (not counting weekends). Please keep your phone with you. After your telemed appointment, the pharmacy will contact you for your payment information and mailing address to send the prescription to you. If you have questions for the pharmacy, please contact Ravkoo Pharmacy at 863-875-5700 or email them at support@ravkoo.com.

Contact A Physician

2 Due to the extraordinarily high demand for AFLDS telemedicine services and medications, the pharmacy has been unable to meet demand as quickly as it would like. They are addressing this issue and it will be improved, however in the meantime please note the following.

- First – patients with symptoms will be prioritized. If you do not have symptoms, please do not say you do – you have time to receive your meds and you will still receive them relatively quickly. We are asking everyone to act honorably knowing they will be able to get what they need.
- Second – typically the physician is able to see you the same day or the next day, and the pharmacy typically sees you within 24 hours of that. Please be patient as it now may take up to 2-7 days.
- Third – as a reminder – our physician services are available for payment only because we still have a free market which is allowing you to buy something you want for a fair price. We have received thousands of emails from non-Americans who would pay exorbitant fees to stand where you freely stand: the ability to purchase something useful. So we do not answer any emails from people asking us about this service being covered by insurance. We are outside the insurance system specifically because the insurance system is blocking you from obtaining what you need for your good health.

3 Hydroxychloroquine (HCQ), Ivermectin, and other COVID-19 medications can be obtained by prescription in the USA in almost every state. AFLDS-trained and licensed physicians are available via telemedicine for a short consultation. Our physicians know that HCQ and Zinc are effective both prophylactically and when used early. The telemedicine physician will review your history. Almost all patients can safely take these medications.

4 If you miss the telemed call, you can either wait for the second call (which will come), send an email to aflds@encoretelemedicine.net, or call their customer service at (404) 601-1276.

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FLCCC ALLIANCE

Front Line COVID-19 Critical Care Alliance
Prophylaxis & Treatment Protocols for COVID-19

We are offering telemedicine consultations for the I-Mask protocol designed by the Front Line COVID-19 Critical Care Alliance (FLCCC).

In October 2020, the FLCCC Alliance developed a prophylactic and early outpatient combination treatment protocol for COVID-19 called I-Mask+. It's centered around Ivermectin, a well-known, FDA-approved anti-parasite drug that has been used successfully for more than four decades to treat onchocerciasis "river blindness" and other parasitic diseases. It is one of the safest drugs known. It is on the WHO's list of essential medicines, has been given 3.7 billion times around the globe, and won the Nobel prize for its global and historic impacts in eradicating endemic parasitic infections in many parts of the world. Our extensive research on COVID-19 and a rapidly growing published medical evidence base demonstrating its unique and highly potent ability to inhibit SARS-CoV-2 replication and to suppress inflammation, prompted us to use ivermectin for prevention and treatment in all stages of COVID-19.

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Frequently Asked Questions on Ivermectin

answered by Dr. Pierre Kory and Dr. Paul Marik (FLCCC Alliance)

There have been many questions about Ivermectin, and rightly so. Below we provide detailed and comprehensive answers to the most common ones we have received. First and foremost, many simply question the possibility that "Can Ivermectin really do all you've said it can do—prevent and treat all phases of COVID-19 disease? It seems too good to be true – again."

The answer to this question relies on the fact that Ivermectin, since its development 40 years ago, has already demonstrated its ability to make historic impacts on global health given it led to the eradication of a "pandemic" of parasitic diseases across multiple continents. These impacts are what awarded the discoverers of ivermectin the 2015 Nobel prize in Medicine.

More recently, profound anti-viral and anti-inflammatory properties of ivermectin have been identified. In COVID-19 specifically, studies show that one of its several anti-viral properties is that it strongly binds to the spike protein, keeping the virus from entering the cell. These effects, along with its multiple abilities to control inflammation, both explains the markedly positive trial results already reported and poises ivermectin to again achieve similar historic impacts via the eradication of COVID-19.

How could ivermectin be effective if the tissue concentrations needed to kill the virus would require a patient to take massive doses to achieve?

The theory that ivermectin's antiviral activity is dependent on unachievable tissue concentrations is incorrect as follows:

- In the cell culture study by Caly et al from Monash University in Australia, although very high concentrations of ivermectin were used, this was not a human model. Humans have immune and circulatory systems working in concert with ivermectin, thus concentration required in humans have little relation to concentrations used in a laboratory cell culture. Further, prolonged durations of exposure to a drug likely would require a fraction of the dosing in a short-term cell model exposure.
- There are multiple mechanisms by which ivermectin is thought to exert its antiviral effects, with the least likely mechanism being the blocking of importins as theorized in the Monash study above. These other mechanisms are not thought to require either supraphysiologic doses or concentrations and include

1. competitive binding of ivermectin with the host receptor-binding region of SARS-CoV-2 spike protein, limiting binding to the ACE-2 receptor;
2. binding to the SARS-CoV-2 RNA-dependent RNA polymerase (RdRp), thereby inhibiting viral replication (Swargiary, 2020);
3. binding/interference with multiple essential structural and non-structural proteins required by the virus in order to replicate.

- The theory that ivermectin would need supraphysiologic tissue concentration to be effective is most strongly disproven by the now 24 controlled clinical trials which used standard doses of ivermectin yet reported large clinical impacts in reducing rates of transmission, deterioration, and mortality.

Will ivermectin interfere with the vaccine and can I continue to take ivermectin once vaccinated?

Our understanding of the importance of ivermectin in the context of the new vaccines, is that ivermectin prophylaxis should be thought of as a complementary bridge to vaccination until the vaccines are made available to all those in need. At this time, and after speaking with the vaccine experts, we do not believe that ivermectin prophylaxis interferes with the efficacy/immune response to the vaccine, however it must also be recognized that no definitive data exists to more specifically answer this question. However, given that maximal immunity from the vaccines is only achieved 2 weeks after the second dose of vaccine, it is reasonable to take bi-weekly ivermectin until this time point.

Is ivermectin safe and are there any contraindications for use?

The discovery of Ivermectin in 1975 was awarded the 2015 Nobel Prize in Medicine given its global impact in reducing onchocerciasis (river blindness), lymphatic filariasis, and scabies in endemic areas of central Africa, Latin America, India and Southeast Asia. It has since been included on the WHO's "List of Essential Medicines with now over 4 billion doses administered. Numerous studies report low rates of adverse events, with the majority mild, transient, and largely attributed to the body's inflammatory response to the death of parasites and include itching, rash, swollen lymph nodes, joint paints, fever and headache. In a study which combined results from trials including over 50,000 patients, serious events occurred in less than 1% and largely associated with administration in Loa Loa infected patients. Further, according to the pharmaceutical reference standard *Lexicomp*, the only medications contraindicated for use with ivermectin are the concurrent administration of anti-tuberculosis and cholera vaccines while the anticoagulant warfarin would require dose monitoring. Another special caution is that immunosuppressed or organ transplant patients who are on calcineurin inhibitors such as tacrolimus or cyclosporine or the immunosuppressant sirolimus should have close monitoring of drug levels when on ivermectin given that interactions exist which can affect these levels. A longer list of drug interactions can be found on the database of www.drugs.com/ivermectin.html, with nearly all interactions leading to a possibility of either increased or decreased blood levels of ivermectin. Given studies showing tolerance and lack of adverse effects in human subjects given even escalating, high doses of ivermectin, toxicity is unlikely although a reduced efficacy due to decreased levels may be a concern. Finally, ivermectin has been used safely in pregnant women, children, and infants.

Can ivermectin be given to patients with acute or chronic liver disease?

In regards to liver disease, Ivermectin is well tolerated, given that there is only a single case of liver injury reported one month after use that rapidly recovered. Ivermectin has not been associated with acute liver failure or chronic liver injury. Further, no dose adjustments are required in patients with liver disease.

Shouldn't we do a large, prospective, double-blind, placebo-controlled study to "prove" it works before adopting yet another treatment that will not work?

There are several reasons why such a study would likely be unethical to conduct at the current time. We agree that further studies can and should be done but placebo controlled RCT's should be avoided due to the following:

- Currently, a total of over 3,000 patients have been included within numerous randomized, controlled trials with the overall signal of benefit in important clinical outcomes strongly positive with tight confidence intervals. This would make the likelihood of causing significant harm to study subjects in a medical research trial using placebo to be unacceptably high given excessive morbidity and mortality associated with COVID-19.
- Further, the WHO ACT Accelerator Program (https://www.who.int/initiatives/act-accelerator/about) sub-section focused on treatments for COVID-19 and headed by UNITAID has hired research consultants to identify and perform a global systematic review and meta-analysis of all active ivermectin trials in COVID-19. The consultant anticipates having results available from several additional, large clinical trials within the next 4 weeks, and predicts the accumulation of sufficient patient data in these trials to reach a conclusion and recommendation for or against use of ivermectin in COVID-19 during the month of January 2021. Preliminary analyses by the consultants were recently presented at an international research conference and all the available trial results at the time strongly supported the efficacy of ivermectin in COVID-19. If, based on the projected amount of trial data in the coming month, a recommendation for use of ivermectin in COVID-19 is issued by the WHO, any planned subsequent placebo-controlled trials would have to be terminated.

Aren't most of the trials poorly designed and executed, with high risks of bias?

All clinical trials suffer from risks of bias in their design and conduct, as assessed by the Cochrane Risk of Bias 2.0 tool that assesses trial biases with the grades of "some concern, low, moderate, high, or serious". Although one group of authors has assessed many of the trials as having moderate to severe risks of bias, performing meta-analyses of these trials can more accurately detect the true effects despite individual trial biases. Multiple groups, including ours, have performed meta-analyses of these trials, with all groups finding consistent benefits amongst the trials. In fact, the consistency of trial results from both sets of randomized and observational controlled trials from varied centers and countries and trial sizes and disease phases lend even more validity to the estimates of benefit. The references/links to two large meta-analyses can be found below, in addition to the meta-analyses of both prophylaxis and treatment trials performed in our review manuscript:

- FLCCC Alliance review on ivermectin in COVIS-19 – covid19criticalcare.com/flccc-ivermectin-in-the-prophylaxis-and-treatment-of-covid-19;
- ivmmeta.com – this research group's meta-analysis calculated that the odds of ivermectin not being effective in COVID-19 is one in 67 million;
- Toxicology and Pharmacology Department from Lyon University, France: www.metaevidence.org on ivermectin.

Given the large and rapidly rising numbers of U.S patients with COVID-19, couldn't a large randomized controlled trial be performed quickly?

"Peacetime" processes of waiting for "the perfect clinical trial" when we are "at war" with rising case counts, dwindling hospital beds, and increasing deaths is illogical and also unethical as above. All therapeutic decisions in medicine involve implicit risk/benefit calculations. When considering a safe, low-cost, widely available medicine that has been repeatedly shown to lead to consistent mortality and transmission decreases, deferring adoption of this therapy while waiting for "perfect" or "unassailable" data is far more likely to cause excessive harm compared to the lower risk of adopting a safe, low-cost therapy. Again, based on a minimum of the 24 controlled trials results available, the odds that ivermectin is ineffective is 1 in 67 million as per the Covid19 study research group above. Ivermectin can and will be studied in well-designed observational trials which can provide equally accurate conclusions.

The odds that, in the US, we continue to descend further into a humanitarian disaster of historically adverse economic and public health impacts is simply the current reality. Humanist pragmatism, utilizing a therapeutic benefit/safety calculation must be emphasized in place of the now standard, overly strict evidence-based medicine paradigm given the state of the current public health crisis. Further, the numerous careful analyses reporting that, in regions with ivermectin distribution campaigns, precipitous decreases in both case counts and case fatality rates occurred immediately after these efforts began, this further supports the validity and soundness of the decision to immediately adopt ivermectin in the prophylaxis and treatment of COVID-19.

Shouldn't we wait for more data before widely adopting another medicine that may not work?

Making a risk/benefit decision at this time, with the currently available data showing consistent high efficacy and safety with mortality benefits from 24 controlled trials, would far exceed the strength and validity of the rationales used to adopt the entirety of currently employed therapeutics in COVID-19 given all were adopted in the setting of either

- weak clinical impacts measured (remdesivir, monoclonal antibodies, convalescent plasma);
- high costs (remdesivir, monoclonal antibodies, convalescent plasma, vaccines);
- significant adverse effects (remdesivir, vaccines);
- weak, conflicting, or non-existing evidence bases to support use (remdesivir, monoclonal antibodies, convalescent plasma);
- conflicting treatment guidelines (remdesivir – WHO and NIH recommendations conflict);
- non-peer reviewed studies (remdesivir, monoclonal antibodies, convalescent plasma);
- absence of even pre-print study data available for wider scientific review (vaccines).

If ivermectin is so effective in COVID-19, how come no countries have adopted it into their national treatment guidelines?

Multiple countries and regions have formally adopted ivermectin into their treatment guidelines, with several having done so only recently, based on the emerging data compiled by the FLCCC Alliance.

Examples include:

- Macedonia – December 23, 2020
- Belize – December 22,2020
- Uttar Pradesh in Northern India – a state with 210 million people – adopted early home treatment kits which include ivermectin on October 10, 2020
- State of Alto Parana in Paraguay – September 6, 2020
- Capital City of Lucknow in Uttar Pradesh – August 22, 2020
- State of Chiapas, Mexico – August 1, 2020
- 8 state health ministries in Peru – Spring/summer 2020
- Lima, Peru – Many clinics, districts use and distribute ivermectin, as of October the hospitals no longer use.

Isn't the existing set of clinical studies of ivermectin inconclusive since they are all small?

While a minority have been "small" (generally defined as including less than 100 patients, particularly when looking at mortality as an endpoint), the majority have been large, with several including hundreds of patients. The smaller studies were, as expected, less likely to find statistically significant differences, while every randomized controlled trial (RCT) which included over 100 patients found highly statistically significant differences in important clinical outcomes, reporting decreases in rates of transmission, progression, or mortality as follows:

- 4 prophylaxis RCT's with > 100 patients – large benefits, all statistically significant;
- 2 outpatient RCT's with > 100 patients – large benefits, all statistically significant;
- 4 hospital patient RCT's with > 100 patients – large benefits, all statistically significant.

Further, the total number of patients within controlled trials now include over 7,000 patients with over 3,000 within randomized, controlled trials alone. This number of randomized patient data now approaches the number of treated patients with the RECOVERY randomized controlled trial, a study whose results immediately transformed the treatment of COVID-19 with widespread adoption of corticosteroids in patients with moderate to severe illness.

Isn't the promotion of ivermectin the same thing as hydroxychloroquine – everyone claims it works when all the randomized controlled trials showed it didn't?

The decision to adopt hydroxychloroquine was made early in the pandemic, when, despite the lack of clinical trials data to support use, there existed a scientific rationale given pre-clinical data suggesting anti-viral and anti-inflammatory properties. Thus, the decision at that time was likely a sound one based on a risk/benefit calculation given HCQ's low cost, minimal adverse effect profile, wide availability/ease of compounding, and long history of use. Such a decision was also entirely in keeping with Principle 37 of the Helsinki Agreement on Medical Research, first formulated in 1964, which declares that "*physicians may use an unproven intervention if in the physician's judgement it offers hope of saving life, re-establishing health or alleviating suffering. This intervention should subsequently be made the object of research*." In keeping with Declaration 37, immediately after the widespread adoption of HCQ, studies were immediately conducted by many centers. Unfortunately, all of the RCT's reported negative results which led to rapid de-adoption with the exception of sporadic continued use in early phase disease. Note that the current widespread non-adoption of ivermectin in the face of hundreds of thousands of ill and dying, currently violates Declaration 37 in that adoption is being purposely and overtly avoided despite the efficacy/risk assessment of now numerous well controlled trials including over 3,000 total patients which report massive drops in transmission and large decreases in mortality when used in the treatment of COVID-19 patients. The data supporting adoption is now approaching that of corticosteroids, where widespread use began almost immediately upon the reporting of results of the 6,000 patient RECOVERY trial which demonstrated a mortality benefit (with only 2,000 patients treated with corticosteroids in that trial).

How does the NIH arrive at their recommendations for current widely used therapies and why is the rationale for these recommendations so difficult to understand?

We are unable to identify a consistent approach to the strength and timing of NIH recommendations and/or updates to the recommendations as illustrated in the following examples:

Convalescent plasma use was adopted early in the pandemic and fell into widespread use despite the absence of supportive clinical trials evidence at the time and the high cost/resource use associated. The current NIH recommendation, last updated July 17th, 2020 is that "there are insufficient data to recommend either for or against use." As of December 26, 2020, 7 RCT's and 6 OCT's have been conducted without reporting a single statistically significant clinical outcome benefit. No updated recommendation has been issued despite these trial results. Widespread use continues.

Remdesivir – a purported anti-viral agent, currently has been given a "neutral" recommendation (i.e., neither for or against use) by the NIH in hospital patients who are not on oxygen, while it has a B-IIa in support of use in hospitalized patients on supplemental oxygen only (i.e., without need for either high flow or any form of mechanical ventilation). A B-IIa indicates that the recommendation is of moderate strength and is based on either an RCT with a major limitation or from a sub-group analysis of an RCT. The RCT used in support of this recommendation found that in a subgroup or patients that received 5 days of remdesivir, their clinical condition on Day 11 was improved compared to standard care although the sub-group that received 10 days of therapy did not achieve an improved clinical condition on day 11. Note also that remdesivir is high cost (over $3,000 per dose), requires IV administration, and resulted in a statistically significant increased number of adverse effects. Finally, no RCT has shown remdesivir to reduce the mortality rate of COVID-19 patients and the above NIH recommendation in support of use conflicts with the updated November 20, 2020 recommendation by the WHO against the use of remdesivir in COVID-19, regardless of disease severity, based on findings from their SOLIDARITY trial along with 3 other RCT's including a total of 7,000 patients. Despite this effort by an international guideline development group consisting of 28 clinical care experts, 4 patient-partners and an ethicist, the NIH COVID-19 treatment guideline, last updated December 3, continues to recommend the use of remdesivir in COVID-19.

Anti-IL-6 therapy (tocilizumab, siltuximab, sarilumab) – the NIH recommendation, last updated November 3, 2020 is a B-I against use (moderate strength, based on RCT data). Currently, only one RCT has been conducted and was negative, although it was performed prior to recommendations for corticosteroid use, indicating that as a stand-alone immunomodulatory therapy, it appears ineffective. However, a meta-analysis of findings from 16 observational trials including a total of 2,931 patients currently reports statistically significant decreases in mortality when used. Clearly the evidence for use conflicts, suggesting perhaps a "neutral" recommendation more appropriate, but the NIH rating scheme appears to weigh a single RCT over meta-analyses of observational trials in this instance.

Monoclonal Antibodies – guidance approach with these novel recombinant human monoclonal antibodies is even more complex/confusing. Currently , they (casirivimab, imdevimab, and bamlanivimab) all have an EUA (emergency authorization for use) by the FDA for patients with mild-to-moderate illness at high risk for progression. This EUA, although specifically stated that it does not constitute FDA approval of these products, appear to give the impression that they are either appropriate for use, or simply can be used as a treatment option. However, the NIH recommendation on these agents, of December 2nd, is a "neutral" one, i.e., "at this time, there are insufficient data to recommend either for or against the use of casirivimab plus imdevimab for the treatment of outpatients with mild to moderate COVID-19." We interpret the totality of these actions to mean that these agents are permitted for use, but are not necessarily recommended for use and is thus left to clinician/patient judgement. It should be noted that these actions above were based on a single RCT whose primary endpoint, although a positive one, was the change in nasopharyngeal SARS-COV-2 levels over 7 days, a non-patient centered outcome. The secondary endpoint was a composite need for an ER visit or hospitalization, and although lower in the treated group, both were of low incidence and the data on hospitalization need compared to an ED visit was curiously not provided. Again, no mortality benefit was found with use of these, novel, high-cost agents, both requiring IV administration. However, it appears to have earned what we would interpret as a cautious, weak recommendation for use by our leading governmental health agencies. One clearly positive aspect of this action is the clear attempt to ensure an available option for early treatment with the hopes of preventing hospitalization. We encourage further such efforts, albeit with more effective and more widely available medications like ivermectin, given the numerous RCT's showing less transmission, need for hospitalization, and fatalities.

Ivermectin – the NIH recommendation, last updated August 27, 2020 is an A-III against use, indicating "strong level", based on "expert opinion" only. This recommendation persists despite our review manuscript, first available on a pre-print server on November 13, 2020, which reported on the results of 24 controlled trials including a total of 7,000 patients, with 15 of them randomized and included over 3,000 patients. In this review paper, currently undergoing peer review, meta-analyses of both prophylaxis trials (4 RCT's, 3 OCT's, with >800 in the RCT's) and treatment trials (11 RCT's, 6 OCT's, with >1800 in the RCT's) show, respectively, large, statistically significant reductions in transmission of COVID-19 or large, statistically significant reductions in mortality rates. Again, we are asking the NIH for a rapid review of these data and an updated recommendation for use given the rising case counts, fatalities, and increasing stress on many regional hospital systems and health care workers. We implore the NIH to adopt a more pragmatic, humanistic approach based on a risk/benefit analysis for use in a humanitarian crisis rather than the prevailing strict requirement for large, multi-center RCT's prior to formulating a recommendation.

Doesn't most of the data on ivermectin come primarily from uncontrolled observational trials?

- Every observational trial (ignoring the massive case series for a moment) that has studied ivermectin in COVID-19 have matched control groups for comparison, with some controlled using a technique called propensity-matching and with many others using contemporaneous, well-matched control groups of patients who did not receive ivermectin by their treating doctor (one would need a close reading of each study to see how well matched they are).
- Observational controlled trials have historically been shown to reach identical conclusions to randomized controlled trials on average in almost all disease models and treatments studied. This fact has been reported in systematic reviews comparing findings from these trial designs and published in the Cochrane database multiple times. It is a fact and a truth about evidence-based medicine that is both neither taught nor emphasized by most of academia who have recently been described, for this reason, as "RCT fundamentalists." We remind all that observational trials are scientifically valid and should be relied upon, even more so in a pandemic.
- The consistency of findings among the observational and randomized trials of ivermectin is both profound and unique when large numbers of trials have accumulated in the study of a particular medicine. What is most often the case if not the rule, "conflicting results" between trials are typically found, particularly when the medicine is not potent and/or some of the trials are poorly designed. The remarkable consistency the trials studying ivermectin in COVId-19 cannot be over-emphasized. That consistency is unique and persuasive given the diverse set of centers and countries and sizes and designs and phases of illness studied in those trials. It was exactly this consistency that first alerted Professor Paul Marik and the FLCCC Alliance to ivermectin's efficacy. That consistency has reliably continued in the face of rapidly increasing numbers of trial results becoming available.

Aren't the majority of the existing studies not yet peer-reviewed?

- 14 of the 24 controlled trial results have been peer reviewed, along with 2 of the 5 case series.
- Applying findings from trial manuscripts posted on pre-print servers have been a standard in many of the sciences, including medicine, particularly during the pandemic. Every novel therapeutic that has been widely adopted in medical practice during COVID-19 happened before the peer-reviewed manuscript was available for analysis by the medical community, with the exception of hydroxychloroquine which was initially adopted without any posted or published clinical evidence base. Examples of pre-print adopted therapeutics are remdesivir, corticosteroids, monoclonal antibodies, convalescent plasma and the vaccines. Again, all were widely adopted before succeeding the peer-review process.
- Note that the vaccines represent an even more unique case as inoculations of citizens began even before a pre-print manuscript was made available for wider review by the scientific community. Thus, to dismiss the value of ivermectin study results because only 50% have been published in peer-reviewed journals, would suddenly create a new evidentiary standard at a critical point in the pandemic that willfully ignores both the extreme importance that pre-prints play in the rapid dissemination of medical knowledge as well as the reason for their creation. Peer-review takes months. We do not have months. Thousands are dying every day.

Shouldn't we wait until there are more randomized controlled trials?

Fifteen of the 24 controlled trials results are prospective and randomized and include over 3,000 patients. Again, note that the RECOVERY trial which made corticosteroids the standard of care in COVID-19 overnight was a randomized controlled trial which included 2,000 patients treated with dexamethasone. The number of ivermectin treated patients in the RCT's are now approaching 2,000. Further, the number of patients in the 9 observational controlled trials also total over 4,000 patients. Thus, we now have 7,000 patients and 24 controlled trials of ivermectin in varying sizes and designs and countries, with nearly all resulting in consistent, reproducible, large magnitude, statistically significant findings of efficacy as a prophylactic and in early and late phase disease. Given these marked reductions in transmission, hospitalizations, and death, any further studies using a placebo would be unethical. For any who require more clinical trials data, well-designed observational controlled trials are a perfectly valid alternative and will (and should) be conducted by many, even after adoption as a treatment agent.

Isn't it a problem that all the trials were done in foreign countries and may not be generalizable to our patients here?

Such concerns reflect a surprising degree of ethnocentrism that we believe will lead to further harms against humanity. We cannot deny that these concerns currently present a significant barrier for the evidence compiled in our manuscript to influence practice. We recently learned that a COVID-19 therapeutics committee of a large hospital health care system in the Midwest recently reviewed the existing trials data for ivermectin in November and decided not to recommend ivermectin, with one of the stated reasons being that "many of the studies were performed abroad and are likely not generalizable to our patients". The belief that a potent anti-viral medicine only works in foreigners and not in Americans is ludicrous and deserves no further comment or explanation except to note it as an example of the most extreme skepticism that can be displayed by providers who simply "do not believe" in the efficacy of ivermectin.

The NIH recommends against the use of ivermectin outside of clinical trials.

That recommendation is from August 27th, is graded IIIA, which means that it was expert opinion only and reflected a "strong" opinion against. Given the amount of data available as of today, December 26, 2020, we must ask the question, "What should the strength and level of recommendation for Ivermectin be updated to by the NIH? First, all must understand how recommendations for medical therapies are created by the NIH. They essentially use the below grading scale which provides an assessment of both the strength of the recommendation and the quality of evidence to support that recommendation.

The last NIH recommendation on ivermectin from August 27th was graded AIII against use as per above table, indicating a strong recommendation based on expert opinion only, despite it being one of the world's safest, cheapest and most widely available drugs. No rationale or supporting evidence. Further, the grade implies that there was no available clinical evidence at the time to make an "evidence-based" grading, yet we know of a number of trials results available at that time.

Currently, the strongest recommendation possible would be an A-I in support of ivermectin and thus would require "one or more randomized trials with clinical outcomes and/or laboratory endpoints." Although not specifically stated, this grade typically requires a large, multi-center, randomized, double-blinded, placebo-controlled trial dependent on immense financial resources and infrastructure using the support of pharmaceutical companies or large government research grants. Neither has occurred with ivermectin nor do we think it reasonable or ethical to do so at this point. Despite this, we are fortunate that researchers from many single, academic and non-academic medical centers decided to conduct such trials. Although not a large multi-center trial, we have data from 15 randomized controlled trials (RCT's) with nearly all reporting improvements in "clinical outcomes" and/or "laboratory endpoints." Note that the 15 RCT's consist of trials studying ivermectin as a prophylactic agent (4), early outpatient treatment (5), and in hospitalized patients (6). In each phase of illness, all the RCTs with over 100 patients found statistically significant reductions in rates of transmission, need for hospitalization/mechanical ventilation, or mortality. Thus, it would appear that ivermectin more than fulfills the criteria for a Level A-I recommendation in support of its use as a prophylactic and treatment agent for COVID-19 and thus heath care providers would immediately adopt ivermectin.

However, if somehow the entirety of the above RCT results could be dismissed as constituting "insufficient" or "low quality" evidence, the question would then be whether the ivermectin trials data meets Level A-II evidence. It should be noted that level A-II evidence, in the face of the pandemic and in the context of a cheap, safe and widely available drug, would effectively translate into the same level of action and adoption as level A-I evidence by the nation's health care providers given that remdesivir, a medication with only a B-IIa recommendation is widely used. For a level A-II recommendation, evidence, all that is required are supportive findings from "one or more well-designed non-randomized, or observational cohort studies". Again, fortunately, there are many such studies on ivermectin in COVID-19, with the largest and strongest being Dr. Rijter's study from Florida, published in the major medical journal Chest several weeks ago, where they used propensity matching, a technique accorded by many to be as valid a design as a well-conducted RCT's. His and many other well-designed OCT's exist, all reproducing the findings from the above mentioned RCT's. Thus, at a minimum, an A-II recommendation would be met, which would and should lead to immediate and widespread adoption. Further, given the amount of patient data and number of trials results available, it is not worth considering whether a recommendation would be issued as anything less, such as moderate strength (B), or weak strength (C) or a quality grade of III. So, it would appear that ivermectin clearly meets either an A-I or A-II level recommendation in favor of use in COVID-19. Note that this recommendation can be made without the epidemiologic data that has been amassed supporting the population-wide impacts of widespread ivermectin use…

Why should we be convinced of findings from non-peer reviewed epidemiologic analyses that do not employ control groups?

The epidemiologic data presented in our manuscript essentially provides the strongest level of medical evidence attainable as they consist of findings from what should be considered large, real-world "natural experiments" which spontaneously occurred within many cities and regions of the world when local and regional health ministries decided to initiate widespread ivermectin distribution to their citizen populations. The "control groups" in these natural experiments were the neighboring cities and regions that did not employ widespread ivermectin distribution. In the areas with ivermectin use compared to those without, large and temporally associated decreases in case counts and fatalities were found after the ivermectin distribution began. Again, the magnitude and reproducibility from city to city, region to region and country to country is unassailable. All data were sourced from universally used, publicly available COVID-19 epidemiologic databases. The manuscript by Chamie et al which focuses solely on these data, is currently near submission for publication, and has now been refined and reviewed by scientists and researchers under the direction of a dean at a major medical research university. A number of these scientist researchers have joined as co-authors of this historically important manuscript.

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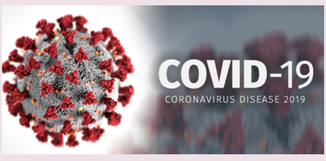

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Dr. Stella Immanuel's Testimony

I'm a primary care physician in Houston, Texas. I actually went to medical school in West Africa, Nigeria, where I took care of malaria patients, treated them with hydroxychloroquine and stuff like that. So I'm actually used to these medications. I'm here because I have personally treated over 350 patients with COVID. Patients that have diabetes, patients that have high blood pressure, patients that have asthma, old people … I think my oldest patient is 92 … 87 year olds. And the result has been the same. I put them on hydroxychloroquine, I put them on zinc, I put them on Zithromax, and they're all well. "For the past few months, after taking care of over 350 patients, we've not lost one. Not a diabetic, not a somebody with high blood pressure, not somebody who asthma, not an old person. We just recently lost one patient.

"So right now, I came here to Washington DC to say, America, nobody needs to die. The study that made me start using hydroxychloroquine was a study that they did under the NIH in 2005 that say it works. Recently, I was doing some research about a patient that had hiccups and I found out that they even did a recent study in the NIH, which is our National Institute … that is the National … NIH, what? National Institute of Health. They actually had a study and go look it up. Type hiccups and COVID, you will see it. ,

They treated a patient that had hiccups with hydroxychloroquine and it proved that hiccups is a symptom of COVID. So if the NIH knows that treating the patient would hydroxychloroquine proves that hiccup is a symptom of COVID, then they definitely know the hydroxychloroquine works."I'm upset. Why I'm upset is that I see people that cannot breathe.

I see parents walk in, I see diabetic sit in my office knowing that this is a death sentence and they can't breathe. And I hug them and I tell them, 'It's going to be okay. You're going to live.' And we treat them and they leave. None has died. So if some fake science, some person sponsored by all these fake pharma companies comes out say, 'We've done studies and they found out that it doesn't work.' I can tell you categorically it's fake science. I want to know who is sponsoring that study. .....

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How to Get Ivermectin

Prescriptions:

We understand and empathize with the challenges faced in obtaining a prescription for ivermectin during this time period prior to its use being formally adopted in national or international COVID-19 treatment guidelines. We are anticipating that the treatment guidelines will be updated at a future date, as an overwhelming number of studies showing positive outcomes for ivermectin's use in both prevention and all stages of treatment of COVID-19 continue to pour in from researchers around the world. Information on those studies and scientific meta analyses of studies on ivermectin produced to date can be found on our Ivermectin in COVID-19 page. **The FLCCC Alliance's "Review of the Emerging Evidence Demonstrating the Efficacy of Ivermectin in the Prophylaxis and Treatment of COVID-19", which was peer-reviewed and published on May 1, 2021, in the American Journal of Therapeutics**, can be read here..

However, until ivermectin's use as both a preventive and treatment agent is more widely accepted or recommended, many physicians will be reluctant to prescribe. We can only suggest the following approaches:

- Discuss with your primary health care provider. If they are unconvinced of the data, share with them our Complete Guide to the Management of COVID-19 which can be downloaded from this website and shared. Please understand that many will prefer to avoid adoption of ivermectin treatment until such a time as the guidelines are updated by public health authorities.
- If your doctor will not prescribe ivermectin for you, please contact one of the following tele-health companies (US only):

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- Information to share with your doctor
- Please read and share also our One-page summary of our Review of the Emerging Evidence Supporting the Use of Ivermectin in the Prophylaxis and Treatment of COVID-19.

DISCLAIMER

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Medical Practices Offering Early Treatment to COVID Patients

Alaska Family Medical Care
Anchorage, Alaska
Contact: 9075624045
Other states where licensed: United States

Hillside Family Medicine, LLC
Anchorage, Alaska
Contact: 907 344-0200, staff@hillsidemedicine.com
http://HillsideMedicine.com
Telemedicine required for Covid positive patients.

Valley Mobile Medical, LLC
Chandler, Arizona
Contact: 4808618605
http://Www.valleymobilemedical.com/covid-19-resources
Arizona Telemedicine Option
Other states where licensed: United States

Jensen Family Wellness
LAKESIDE, Arizona
Contact: 928-224-4270
http://www.jensenfamilywellness.com
Board certified in family medicine and integrative medicine.
Functional medicine certified by IFM
Trained in fellowship with Dr Andy Weil and colleagues at U of A integrative medicine
Other states where licensed: UT NV CO

Keystone Natural Family Medicine
Mesa, Arizona
Contact: 4805355688
DPC practice
Other states where licensed: United States

Robb Oto-Neurology Clinic
Phoenix, Arizona
Contact: 480.303.1133
http://www.RobbMD.com
Telemedicine consultations are available.
Patients must be located in Arizona at the time of the initial consultation.
Dr. Robb is not contracted with health insurance companies, Medicare or Medicaid.
Patients pay for services privately.
Other states where licensed: United States

A Renew You
Scottsdale, Arizona
Contact: Phone: 480-747-7700 Email: drlwright007@gmail.com
http://www.drharolyn.com
Telemedicine option. Licensed to practice in AZ and NV. Zip code is 85260.
Other states where licensed: United States

Arizona Center for Advanced Medicine
Scottsdale, Arizona
Contact: 480-240-2600
http://www.arizonaAdvancedMedicine.com
Initial appointment to check for COVID only $85.
Initial full appointment (2 12 hours) $550 - cannot treat a patient without knowing who they are and where they come from medically speaking.
We do not take any insurance payments, but will give receipt with codes for potential reimbursement.

John J. Adams MD, MD(H)
Sedona, Arizona
Contact: 928 282 3014; jams999@protonmail.com
https://doxy.me/Johnjadamsmd
Telemedicine - Home medications for Covid19 offered.
Other states where licensed: California

AZ Good Health Center
Tempe, Arizona
Contact: 480-704-3446

AZ Good Health Center
Tempe, Arizona
Contact: 480-704-3446
http://www.azgoodhealth.com
We are not currently accepting insurance though we keep patient costs down compared to offices which do accept insurance payments.

Vive Life Center
Tucson, Arizona
Contact: Office phone 520-797-9131;
info@vivelifecenter.com
Practice is fee-for-service, direct pay with credit card or health savings account/flex spending account debit card. Vie Life Center does not file insurance but provide the forms for patients to file their own claims. We office consultations and after physician evaluation that includes consent for treatment, medical history questionnaires, appropriate assessment of physical findings, laboratory studies, and other studies determined needed by the physician, then medications tailored to that patient are recommended, and will be prescribed according to state and federal regulations.
Other states where licensed: AZ, TX, VA

Jane Orient, MD
Tucson, Arizona
Contact: 520-325-2689

Cynthia Miley, M.D.
Tucson, Arizona
Contact: 520-245-6757
https://www.drmiley.com/contact
Home visits, $100 initial $50 subsequent visits. Phone call immediately when symptoms arise for evaluation of illness.

Pioneers Health Clinic
Brawley, California
Contact: 7603514573

Center For Wellness
Montebello, California
Contact: 323-726-6289, or Info@Center-For-Wellness.net
http://Center-For-Wellness.net
Other states where licensed: Nebraska

Michael Fitzgibbons M.D.
Santa Ana, California
Contact: 7145413744
We are contracted with Blue Cross Blue Shield. We accept Medimedi patients. We are not contracted with MediCal.

Center for Wellness & Integrative M
Soquel, California
Contact: OTHER
http://DrTom.com/CovidConcern
Please DO NOT publish our office phone number.

Please publish the above webpage:
DrTom.com/IvermectinInfo

and link this page to:
https://drtomyarema.com/ivermectin-info/?utm_source=AAPS&utm_medium=directory&utm_campaign=AAPS_directory

If you have questions, please contact our webmaster:
Dion@DrTomYarema.com
Other states where licensed: United States

Clear Sky Medical
Centennial, Colorado
Contact: 3037907860
http://www.clearskymedical.com
We do take most insurances or accept cash, our cash prices are guided by regular average reimbursement rates according to CPT code which depends on length and complexity of the visit.

TelehealthNP
Denver, Colorado
Contact: Visit: www.telehealthnp.com to book an appointment
http://www.telehealthnp.com
During the Public Health Emergency, we are currently serving: AZ, CA, CO, HI, ID, MN, MO, MT, NC, ND, NE, NV, LA, PA, OR, SD, WV, WA.

Visit: www.telehealthnp.com to book an appointment

Visits: covid prevention $75; covid illness $85; long haul covid $115
Other states where licensed: AZ, WA, OR, MN

Mallory Family Wellness
Loveland, Colorado
Contact: 970 669 9245
http://docmallory.com
We take no insurance.
Other states where licensed: WY, NE

Murphy Medical Associates
Stamford, Connecticut
Contact: 833-MD-MURPH
https://stevenmurphymd.com/
Other states where licensed: CT, NY, CO, UT, ME, Emergency NJ/AZ/SC/KY/CA/NC/ID/WA/MS

Foxhall Cardiology
washington, District of Columbia
Contact: 2024645770
Other states where licensed: United States

PSC Florida
Fort Lauderdale, Florida
Contact: 954-906-6000
http://www.pscflorida.com

Headwaters Health
Jacksonville, Florida
Contact: 9042906028
http://www.HeadwatersJax.com
If insurance is not an option, Cash price is $150 for initial visit and $100 for follow up visits. We offer telemedicine appointments.

ROSABEL MARIA BENCOMO MD PA
Miami, Florida
Contact: 786-800-2430
http://www.mdteleme.com
Our office treat patient by telemedicine, using phone, iPad, or computer, we provided medical evaluation, diagnoses, and treatment.
We have successfully treated our COVID patients, decreasing the need to go to other facilities like urgent cares or ER and the complication due to no early treatment.
Go to our web page www.mdteleme.com download the app, self-schedule appointment or call to our main number:
786-800-2430
Cost: $59.99 per visit.
Language: Spanish and English

Anthony M. D'Agostino M.D.
Naples, Florida
Contact: spock@adagostino.com
http://adagostino.com

Professional Medical Services of Naples
Naples, Florida
Contact: 239-263-0133
http://WWW.PERSONALCONSULT.COM

John Littell MD PA
Ocala, Florida
Contact: 407-343-1711
http://johnlittellmd.com

MyFreeDoctor.com
Pensacola, Florida
Contact:
http://MyFreeDoctor.com
Free Doctor consults all 50 states! Yes we prescribe hydroxychloroquine, zpacks, ivermectin, etc
STEP 1 is to download app by clicking link below

medici.cx/FREEDOCTOR

invite code: FREE DOCTOR
*Create in PATIENT's name!

Other states where licensed: FREE doctor consults all 50 states
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Dr. William J. Cole, JR. DO
Sarasota, Florida
Contact: Schedule Telemedicine Appointment
http://retirethepandemic.com/florida?utm_source=aaps_directory&utm_medium=directory&utm_campaign=aaps_directory
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Compassion Primary Care
Tampa, Florida
Contact: 813-669-3084
http://compassionprimarycare.com

George L Smith III MD
Covington, Georgia
Contact: 770.786.0643

Keating Family Medicine
Dawsonville, Georgia
Contact: 706-265-4100

Direct Physician Services
Gainesville, Georgia
Contact: 770-530-3342
http://dpsga.com
Cash based primary health practice with emphasis on menâ€™s health.

Other states where licensed: NC, SC

Tate Medical Associates
Jasper, Georgia
Contact: 678 454-3331; 88 Clinic Road Tate, GA. 30177
We have self pay and telehealth options

Personal Integrative Medicine PLLC
Ringgold, Georgia
Contact: 7068617377
http://www.drprevent.com
It is best to check the above website. We do not accept any third party insurance.
Other states where licensed: United States

Sharon Olson, DO
Kamuela, Hawaii
Contact: 808-885-7880 or 707-695-7438
I have been doing Integrated Medicine since 1984. Licensed since 1970
Other states where licensed: California

Urgent Care West Maui
Lahaina, Hawaii
Contact: 808-667-9721
http://www.westmauidoctors.com

Chicago Health and Wellness
Chicago, Illinois
Contact: drbain@docintheloop.com
http://www.docintheloop.com
You could go to my website and press for appointment.
My website is www.docintheloop.com

Telemedicine practice at this time..

Text2MD
Chicago, Illinois
Contact: Contact information prefer Email info@text2md.com and Phone 855-767-8559
http://www.text2md.com
Telemedicine practice offering I-Mask protocol consultations for COVID-19 prophylaxis, treatment. We treat and manage long covid symptoms with innovative protocols. Functional medicine and allopathic medicine approach. Cost for consultation $55 includes 1-month unlimited follow-up (Text Messaging). Required to download Medici app on your smartphone and add activation code Text2MD
Other states where licensed: AL, AZ, CO, FL, GA, IA, ID, IL, KS, KY, MD, ME, MI, MN, ND, NE, NJ, NV, SC, SD, TN, UT, VT, WA, WI

Synergy Health DPC
Chicago, Illinois
Contact: Text or call
http://www.synergyhealthdpc.com
All TeleHealth

Unlimited memberships available
Other states where licensed: Cover all states ubder white house order allowing providers to cross state lines
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The Center for Primary Healthcare
Orland Park, Illinois
Contact: 708 349 0070
http://cphealthcare.org
In-office visits allows us to establish a relationship with new patients in the best manner. Telehealth visits are provided if infection control is a concern. Dr. Crevier is board certified in internal medicine and pediatrics and works with a fantastic team of nurse practitioners and nurses. It's our privilege to care for patients and their families.

Innovative Medical Therapies LLC
Pekin, Illinois
Contact: 309-347-2714, clientcare@imtil.com
http://innovativemedicaltherapiesdpc.com
Direct Primary Care membership payment model
Cash payment model is also available
Telemedicine visits are available

Protech Recovery
Seymour, Indiana
Contact: 812-279-1798
http://www.protechrecovery.org
We are a cash at time of service practice. We will assist patients understand their insurance and how to file an out of network claim for our services.
Other states where licensed: United States

Access Family Physicians
Zionsville, Indiana
Contact: 3179734894

Rejuvagent
Davenport, Iowa
Contact: 563-508-9266
Other states where licensed: Wisconsin, Alabama

Holton Direct Care
Holton, Kansas
Contact: 785.362.8677
http://www.holtondirectcare.com
We're a Direct Primary Care practice, requires membership. We will do one-time visits for non-members needing covid testing and early treatment, for a cash price of $160, which includes testing but doesn't include medications, which we prescribe and dispense as well for an additional wholesale price.

Bluegrass Family Wellness
Crestwood, Kentucky
Contact: 5025328223
http://www.bluegrassfamilywellness.com
Other states where licensed: United States

Direct Primary Care of Louisville
Louisville, Kentucky
Contact:
http://www.dpc-louisville.com

Meryl Nass, MD
ELLSWORTH, Maine
Contact: 207 610-5885
Other states where licensed: none

Patriots Health
Waterville, Maine
Contact: 207 616 3360
http://www.patriots-health.com
This is a hands on practice that does not accept insurance. It is a membership practice for working class patients or anyone who needs a personal physician. Internal medicine /veteran owned/Christian based. Tele-medicine and sliding scale payment available. see website for details
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Mangat and Kaur Inc.
Germantown, Maryland
Contact: Schedule a televisit by calling 301 515 3333
http://www.germantownmedicalcenter.com
Telemedicine only can accept patients from Va, DC, Delaware, West Viirginia, Pennsylvania.

Accept commercial insurance and Medicare only
Other states where licensed: Maryland

Johnston Family Medicine
Westminster, Maryland
Contact: 410-751-6684
http://www.johnstonfamilymed.com/
Call for appointment. Telemedicine visits available.

Healthworks inc
Dedham, Massachusetts
Contact: 781326-6005

Harvard Family Medicine
Harvard, Massachusetts
Contact: 9787720698
http://harvardfamilymedicine@yahoo.com
Other states where licensed: United States

Infectious diseases Plymouth
Plymouth, Massachusetts
Contact: 5087462138
On referral for INFECTIOUS DISEASES CONSULTATION to Dr Murray NPI 106 347 4989 from your primary care physicians. Fax your oxygen saturation value and past 12 months medical notes and labs to 508-746-2148.
Other states where licensed: United States

John Diggs MD LLC
Wilbraham, Massachusetts
Contact: 4133002233
http://www.JohnDiggsMD.com
My practice is yearly membership based direct primary care (DPC). Under extraordinary circumstances, in the public interest, I will treat those suspected of having COVID-19, in person on a cash basis. $200. Tele-health is an option for follow-up but not the initial visit.

Fundamental Healing
Bloomfield Hills, Michigan
Contact:
https://fundamental-healing.com/
In-netowork with BCBS of MI, Priority Health, United Physicians and Aetna. Seen as a specialist with a referral for Blue Care Network.
Consults $228/hr for those without insurance.
First two visits are a cash pay with superbills provided at the end of the visit with CPT and ICD10 codes to be submitted towards your in-network deductible.

Millennium Cardiology
Farmington Hills, Michigan
Contact:
http://millenniumcardiology.com

Whole Family Direct Care
Marshall, Michigan
Contact: 2695580080
http://www.wholefamilydirectcare.com
We are a direct primary care practice.
Other states where licensed: United States

Falls.MD
International Falls, Minnesota
Contact: 218-283-2444
http://www.falls.md
Single visit pricing starts at $99+tax. Direct primary care (DPC) also available on a month-to-month basis.

McDonagh Medical Center
Gladstone, Missouri
Contact: 8164535940; info@mcdonaghmed.com
http://www.mcdonaghmed.com
We are insurance free. We take assignment for Medicare
Other states where licensed: Iowa

Nurturing Optimal Wellness
Kansas City, Missouri
Contact: 816-453-5545
http://www.nancyrusselld.com
Other states where licensed: United States

Advanced Wellness
Creve Coeur, Missouri
314 576 0094
Cash OR many insurances accepted

Family Medicine Center
Butler, New Jersey
Contact: 9732839300

Craig M. Wax DO LLC Family Medicine
Mullica HIll, New Jersey
Contact: 856-478-4780
http://HealthIsNumberOne.com
Other states where licensed: Pennsylvania

Affordable Health, Inc
Piscataway, New Jersey
Contact: 732-463-0303
http://affordablehealthinc.org
Typical patient visit-,$110
Telehealth visit- $100
We are in no insurance networks, but can submit to your insurance.
Labs available for 80% discount.

George Petruncio M.D. P.A.
Turnersville, New Jersey
Contact: Phone 856-875 -7700
Tele -medicine available call office 1st 856-875-7700 to make a tele medicine appointment we offer early treatment in covid 19 doctor also urgent care doctor at major hospital system in north jersey hackensack meridian seeing over 100 patients a day for covid testing and symptoms doctor petruncio is major radio host of inside medicine on station wwdb 860 am every saturday morning with co host dr fallon. Has major speakers on.
Other states where licensed: Pennsylvania ,Georgia ,North Carolina
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WILLIAM K. SUMMERS, MD
Albuquerque, New Mexico
Contact: 505-878-0192
Private Pay only.
Other states where licensed: Arizona, New Mexico, Pennsylvania,
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Aztec Family Clinic
Gallup, New Mexico
Contact: 505-863-2500

MY HEALTH 360
CLARENCE, New York
Contact: 716-407-3250
https://myhealth360.net/
We offer after-hour and weekend appointments as well. Telemedicine appointments are also available. Please call 716-407-3250 to request appointment. Or book your appointment online https://myhealth360.net/pages/request-an-appointment
We apologize but be don't accept any insurances. Consult fees start from $105.00 per encounter.
Other states where licensed: FLORIDA, ONTARIO (CANADA)

Falcon Clinic for Health, Wellness and Recovery
New Hartford, New York
Contact: 3155074751
http://www.falconclinic.com
Call 315-507-4751, for information on filling out the necessary forms online, and to make appointment for telemedicine visit with the physician.
Other states where licensed: United States

Rahav Wellness
New York, New York
Contact: info
https://rahavwellness.com/

Manhattan Integrative Medicine
New York, New York
Contact: drborenstein@davidborensteinmd.com
We offer telemedicine to patients in NY, NJ, CT, MA, FL, WA , NC.
Other states where licensed: NJ, FL

Arnot Health & Lake Erie College of Medicine
upstate, New York
Contact:
https://www.arnothealth.org/

Bethany Clinic
Charlotte, North Carolina
Contact:
https://bethanymedicalcenter.com/

Piedmont Occupational and Urgent Care
Reidsville, North Carolina
Contact: 3363494070
http://www.reidsville-urgent-care.com
Other states where licensed: United States

J N Holmes & Associates PLLC
Salisbury, North Carolina
Contact: 704-770-6727
We treat adult medical problems, medication management, acute and chronic illness via telemedicine consultation. For Covid-19 illness or prophylaxis, we use hydroxychloroquine and/or ivermectin if medication is needed.

Tom G Peponis Jr DO
columbus, Ohio
Contact: phone 614 274 2252
Dr. Peponis works exclusively for his patients . Decisions are shared between doctor and patient without interference from corporate outside entities.

Physicianscare, Inc.
Lancaster, Ohio
Contact: 7402777570
Other states where licensed: Arkansas

Elite Wellness Group, LLC
Sandusky, Ohio
Contact: 419-602-0293
http://elitewellnessgroup.com

Heritage Family Medicine
Lebanon, Ohio
Contact: 513 934-0900

Dr. Gina Reghetti, D.O., PC, Inc.
Warren, Ohio
Contact: 330-847-3334
http://www.drginareghetti.com
Osteopathic Family & Addiction Medicine
The 110 Building
110 Edward Street, NW
Warren, Ohio 44483-1118

330-847-3334
Private, Independent Medical Practice
No insurances accepted. Fee-for-Service.
U.S. Currency accepted only, please no checks or credit cards.

Concierge Health Network
Warren, Ohio
Contact: 234-414-0215 or CHNBWSchneidermd@gmail.com
https://www.conciergehealthnetwork.com/
Affordable, Quality, Virtually 24/7 Care Provided At Your Convenience! We operate on a fee-based membership structure with transparent pricing and no surprises. Forgoing the traditional medical model in favor of the direct primary care model allows Dr. Schneider the ability to spend more time with each of his patients, and members of Concierge Health Network are never charged an office visit charge or co-pay. Offering virtual establishment and virtual routine office appointments for those suspected of having COVID or those who have COVID.

Medical Specialists Inc
Oklahoma City, Oklahoma
Contact: 405-458-7188 info@medspecokc.com
http://www.medspecokc.com
There are three other Internists in the group as well

Thunder Healthcare
Oklahoma city, Oklahoma
Contact: Both
http://www.mytelemedicina.com
All insurance accepted, HRSA program for uninsured patients, Mytelemedicina.com for telehealth appointments.
Other states where licensed: Florida

UpFront Health, LLC
Seiling, Oklahoma
Contact: drberry@upfronthealth.com
http://www.upfronthealth.com
PCR tests sent to Oklahoma State University lab with 3 day turnaround time. No rapid test available.

Jim Meehan, MD
Tulsa, Oklahoma
Contact: 918-600-2240, support@catalystmd.com
https://meehanmd.com/
Dr. Meehan has safely, effectively, and successfully treated over 700 patients for all stages of COVID.
Telemedicine consultations are available.
Dr. Meehan's prevention and treatment protocols are published on his website blog at https://meehanmd.com/blog/post/210659/early-outpatient-and-prevention-protocols-for-viral-illness.
Other states where licensed: AZ, AR, CA, CO, FL, IL, IA, KS, MO, NE, NJ, NM, NY, OH, OK, PA, TX

The Thrive Clinic
Corvallis, Oregon
Contact: (541)207-1670
http://www.thethriveclinic.com
We do not bill insurance, but patients will receive the documentation to claim "out of network" reimbursement after the service was provided.
Patients must be seen in person.
For more information please refer to the website.

South View Medical Arts
Dallas, Oregon
Contact: Office: 503-623-5430

Integrative pediatrics
Portland, Oregon
Contact: 503-643-2100 (only for patients who live within 50 miles of the office
https://www.integrativepediatricsonline.com
We currently are a medical home - required to be able to take most insurances - therefore to become a patient and be seen you need to live within 50 miles of our office and have an insurance that we can take.
In some cases, we can accept cash payment.

Other states where licensed: Washington, Hawaii

Gettysburg Osteopathic Family Health Center PC
Gettysburg, Pennsylvania
Contact: 7173342233
http://www.gettysburgosteopath.com
Osteopathic manipulation and Integrative medicine

Carolina Health and Wellness Services, LLC
Johns Island, South Carolina
Contact: 8439964908
Our physician is an MD with over 25 years of experience and is a practitioner of Functional Medicine. We are located in Johns Island, SC and provide in-person care at this location. We also offer telemedicine appointments to patients statewide throughout South Carolina and Virginia. We can provide consultations on COVID-19 from a Functional Medicine perspective. We may prescribe Ivermectin, provided it is not contraindicated for the patient. In addition, we can recommend certain vitamins and supplements to help boost the immune system. Patients may call 843-996-4908 for details and to set up a telemedicine appointment.
Other states where licensed: Virginia

Covenant Family Allergy
North Augusta, South Carolina
Contact: 8032797666
http://www.covenantfamilyallergy.com
Call for appointment. Telemedicine visits available.
Other states where licensed: Georgia

Personal Integrative Medicine PLLC
Chattanooga, Tennessee
Contact: 706-861-7377
http://www.drprevent.com
We do not deal with any third parties.
Other states where licensed: Georgia

Denise Sibley, MD
Johnson city, Tennessee
Contact: denisesibley@aol.com
http://denisesibleymd.com

Victory Medical
Austin, Texas
Contact: 5124623627
http://victorymed.com

Texas Direct Medical Care
Austin, Texas
Contact: 512-553-1501
http://txmedicalcare.com
We are a DPC practice but will see patients for COVID19 treatment at low cost.

Sidney A Marchand, IV MD
Beaumont, Texas
Contact: 409-899-2500
http://bmtdermandfamily.com

THR Burleson ED
Burleson, Texas
Contact: 817-782-8000
https://www.texashealth.org/en/Locations/texas-health-burleson
Other states where licensed: none

Dubberly Clinic
Corpus Christi, Texas
Contact: 361-549-4453
New Patient $150, subsequent visits $80, Video Consult $120
Early use of hydroxycyloroquine and if needed nebulized budesonide.

Lozano Medical Clinic
Dallas, Texas
Contact: 214-660-1616
http://lozanomedicalclinic.com
No Telemedicine Available

HeartPlace Dallas Campus - Peter McCullough, MD, MPH
Dallas, Texas
Contact: 214-841-2000
We are at 3409 Worth St.
Suite 500
Dallas TX 75246

Morning Star Family Medicine
Floresville, Texas
Contact: 830-391-0877
http://Morningstarfamilymedicine.com
Telehealth option is available for Texas residents outside of our service area.

Dr. Karen Richardson
Houston, Texas
Contact: 281-685-7424

Rehoboth Clinic
Houston, Texas
Contact: (281)530-1230

PMLCtex
Katy, Texas
Contact: 2817056690
Available for telemedicine to TX residents. Pease call cell (281-705-6690) or email dps@pmlctex.com
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Kingwood Health & Wellness
Kingwood, Texas
Contact: 281-852-1800
http://www.kingwoodwellness.com

Veritas Medical
Lubbock; Abilene; San Angelo, Texas
Contact: 855-683-7482
http://veritasmedical.com

Simple Traditions Family Health PLLC
Magnolia, Texas
Contact: 281-259-7400
http://www.stfhealth.com
We are a direct-pay (no insurance) clinic.

America's ER
Magnolia, Texas
Contact: 281-789-3400
http://aer.com

Amy Offutt, MD
Marble Falls, Texas
Contact: Info@amyoffutmd.com or 830-693-9355
http://www.amyoffuttmd.com
West Frisco Health
McKinney, Texas
Contact: (972) 591-5844

McKinney Family Medicine
McKinney, Texas
Contact: 972.562.8388
http://www.mckinneyfamilymed.com/

Dr. Charles Lively
Odessa, Texas
Contact: 4325809168
http://www.doclivelymd.com
Other states where licensed: United States

Family Medical Day and Night Clinic
Pharr, Texas
Contact: 9567831400,
hgarcia@hiramlgarciamdpa.com
https://familymedical.clinic/

Internal Medicine Associates
PORT NECHES, Texas
Contact: 409 9627606
We see Covid patients within 24 hours of request.

UT Health East Texas
Rusk, Texas
Contact: (903) 683-3600

DrJ Regenerative Medicine
Southlake, Texas
Contact: 817-481-2444
http://drjmed.com
Covid patients provided televisits. COVID testing is not performed in our office but is helpful for treatment guidance and recommended if suspected. Treatment tailored to age, history and not solely dependent on active symptoms. Prevention of later complication is a critical element of our approach. We also give early supportive care to symptomatic individuals on a case-by-case basis. No insurance accepted as payment though we provide paperwork and online data for filing.

Magnificat Primary Care
Spring, Texas
Contact: 8326982127

Your Healthy Success, LLC
Temple, Texas
Contact: (254) 773-8339
http://healthysuccessworks.com
We provide telegraph solutions for COVID19 in the state of Texas. 8am-5pm Mon-Thurs. (254) 773-8339.

Angelina Farella, MD and Virginia Nisbet, MD
Webster, Texas
Contact: 281.332.0500
https://www.abt4kids.com/
This practice is open to adults seeking early treatment or prevention for COVID.

Carolina Health and Wellness Services, LLC
Johns Island, Virginia
Contact: phone: 843 996 4908, admin@chwpeds.com
https://www.chwpeds.com/
Our physician is an MD with over 25 years of experience and is a practitioner of Functional Medicine. We are located in Johns Island, SC and provide in-person care at this location. We also offer telemedicine appointments to patients statewide throughout South Carolina and Virginia. We can provide consultations on COVID-19 from a Functional Medicine perspective. We may prescribe Ivermectin, provided it is not contraindicated for the patient. In addition, we can recommend certain vitamins and supplements to help boost the immune system. Patients may call 843-996-4908 for details and to set up a telemedicine appointment.
Other states where licensed: South Carolina

RetireThePandemic/Wisconsin
Milwaukee, Wisconsin
Contact: OTHER
http://retirethepandemic.com/wisconsin?utm_source=aaps&utm_medium=directory&utm_campaign=aaps_directory
RetireThePandemic.com/Wisconsin

Albert Fisher, M.D.
Oshkosh, Wisconsin
Contact: 10 East Irving Avenue, Oshkosh, Wi. 54902. 920 236 3290
Our office offers outpatient treatment for COVID-19.

NATIONWIDE TELEMEDICINE OPTIONS:

https://myfreedoctor.com/

https://www.americasfrontlinedoctors.org/covid-19/how-do-i-get-covid-19-medication

https://text2md.com/i-mask-protocol/

https://speakwithanmd.com/corsination

https:// FrontlineMDs.com

OTHER LISTS:

List #2 Independent Practices:
https://www.doctorsdontfearcovid.com/

List #3 of Independent Practices (includes non-US options and additional regional telemedicine options): https://www.exstnc.com/

FLCCC List: https://covid19criticalcare.com/guide-for-this-website/how-to-get-ivermectin/

VIEW THIS LIST ONLINE:
https://aapsonline.org/covidearlytreatment

LINKS TO ALL LISTS AVAILABLE AT:
https://c19protocols.com/physicians-facilities-offering-early-treatment/

LIST OF MEDICAL PROFESSIONALS OFFERING ASSISTANCE IN OUR FIGHT AGAINST COVID-19

Simply view the included list and contact the professional near you!

Disclaimer: The following list does not represent a full list of medical personal offering an early intervention COVID protocol. This list is simply those who have reached out to offer their assistance in this fight with COVID.

Please note: The list is not in any particular order.

MEDICAL PROFESSIONALS: WANT YOUR INFO ADDED?

* Indicates required field

Name *

First | Last

Email *

Comment *

SUBMIT

Amy Offutt, MD
707 3rd Street
Marble Falls, TX 78654
(830) 693-9355
https://www.amyoffuttmd.com/contact/

Raynell Odom MSN APRN FNP-BC
Morning Star Family Medicine
90 Eagle Creek Ranch Blvd
Floresville Texas 78114
(830) 391-0877

Penne Jaster, APRN, FNP-BC
The Source
3234 Northwestern Drive
San Antonio, TX 78238
(210) 543-7200
https://www.thesource.org/

Shelley G. Cole, MD
Healthy Success
3010 Scott Blvd., Ste. 104
Temple, TX 76504
(254) 773-8339
www.healthysuccessworks.com

Wm. Marcus Spurlock, MD
9535 Forest Lane, Suite 100
Dallas, Texas 75243
www.renewedvitalitymd.com

Andrew Minigutti, MD
8000 W. Eldorado Parkway Building D Suite A
McKinney, TX 75070
(972) 591-5844 - Office
https://westfrisco.com/our-providers/

Angelina Farella, MD-Pediatrics
425 Henrietta Street
Webster, TX 77598
(281) 332-0500 - Office
https://www.abt4kids.com/doctors/dr-angelina-farella/

Brian C. Procter, MD
McKinney Family Medicine
7692 Eldorado Parkway
McKinney, TX 75070
972.562.8388
http://www.mckinneyfamilymed.com/MFM/index.html

Dr. Stella Immanuel-Emergency Med
Rehoboth Medical Center
6728 Hwy 6 South
Houston, TX 77083
(281) 530-1230 – Office
https://www.healthcare4ppl.com/physician/texas/katy/stella-immanuel-1902947120.html

J. Mark Morris, MD-Family Medicine
1325 N. Dickinson Drive
Rusk, TX 75785
(903) 683-3600 - Office
https://uthealtheasttexas.com/provider/j-mark-morris-md

Kristi Dimmery Edwards, MD
Shannon Clinic
2626 North Bryant Blvd.
San Angelo, TX 76903
(325) 481-2104 - Office
(325) 658-1511 – Office
https://www.shannonhealth.com/provider-directory/providers/kristy-edwards/

Ivette Lozano
10425 Garland Road
Dallas, Texas 75218
(214) 660-1616
https://www.lozanomedicalclinic.com/

Mario Echavarria, MD
580 N. 23rd Street
McAllen, TX 78504
(956) 971-9999 - Office
(956) 971-9979 - Fax
https://www.healthgrades.com/physician/dr-mario-echavarria-2lbwg

Shane Driggs, MD
1015 Sante Fe Street
Corpus Christi, TX 78404
(361) 993-1083 – Phone
https://www.healthgrades.com/physician/dr-shane-driggs-x596p

Jay Turk, MD
Turk Express Care
1190 N FM 56
Glen Rose, TX 76043
817-304-8875

Concierge Health Network
2835 Elm Rd NE STE 1
Warren, OH 44483
conciergehealthnetwork.com

Craig M. Wax DO
Family Medicine and Health
155 North Main St.
Mullica Hill NJ 08062
856-478-4780
HealthIsNumberOne.com

Barbara Moore, NP
Mercy Clinic Primary Care
5201 West Memorial Road
Oklahoma City, OK 73142
(405) 755-4050 – Office
(405) 749-9566 - Fax
https://www.mercy.net/doctor/barbara-elizabeth-moore-aprn-cnp/

Brad Schneider, MD
Concierge Health Network - Direct Primary Care
2835 Elm Rd NE; STE 1
Warren, Oh 44483
(234) 414-0215
CHNBWSchneiderMD@gmail.com

Kenneth Kearns, MD
14780 West Mountain View Blvd
Surprise, AZ 85374
(623) 374-7774 - Office
https://www.healthgrades.com/physician/dr-kenneth-kearns-w8rds

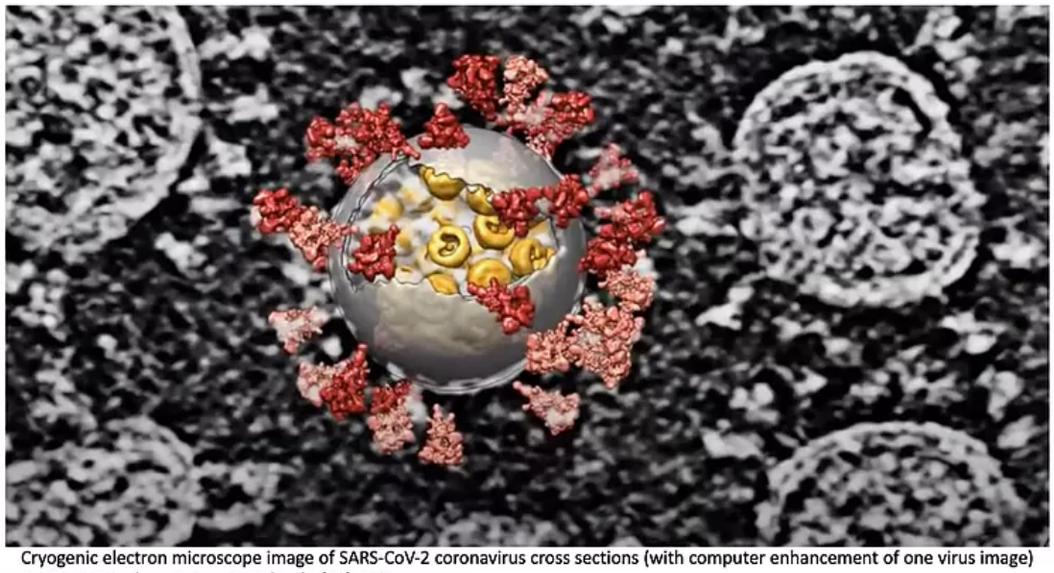
Alan Bain, MD
Chicago Health and Wellness Alliance
8 South Michigan Avenue, Suite 1301
Chicago, Illinois 60603
Phone number is 312-236-7010 extension 2

Directory of Doctors Prescribing Outpatient COVID-19 Therapy

Updated: 15 August 2021

Scroll down for Directory below

INFORMATION ONLY - NOT GUARANTEED ACCURATE
NOT MEDICAL ADVICE - CONSULT A MEDICAL PROFESSIONAL
(See TERMS below)



Cryogenic electron microscope image of SARS-CoV-2 coronavirus cross sections (with computer enhancement of one virus image)
Dr. Sai Li, Tsinghun University School of Life Sciences

Ivermectin (IVM) combined with other medications and supplements is effective for COVID-19 outpatient therapy.
https://c19ivermectin.com

Ivermectin is a WHO and USA FDA-approved drug to treat certain diseases. Worldwide, 3.7 billion doses have been taken by humans. Satoshi Ōmura and William C. Campbell were awarded the Nobel Prize for discovering Ivermectin.

"Ivermectin for COVID-19 is effective and has been given to us on a silver platter. It can completely change the history of this disease. Ivermectin is one of the safest medicines you can give a human being. It has been in use for 40 years and is on WHO's list of essential medications." Dr. Paul Marik, MD, Chief of Pulmonary and Critical Care Medicine, Eastern Virginia Medical School

"Ivermectin works. I've seen that in my patients. Ivermectin can really be the game-changer against COVID-19. It's safe, it's cheap and it works." Dr. Alessandro Santin, MD, Yale School of Medicine

"A systematic review and meta-analysis was conducted by a team of experts. Twenty-one RCTs involving 2741 participants met review inclusion, according to strict criteria. Ivermectin demonstrates a strong therapeutic efficacy. Moreover, ivermectin is the sole therapeutic so far to have demonstrated efficacy at all stages of the very complex clinical course of the covid-19 disease, from prophylaxis through to critical care. 'Real world' whole-country case studies show striking reductions of covid-related deaths and infections as soon as ivermectin distribution is implemented on a wide scale. 25 countries are now using ivermectin against COVID-19, 15 of them country-wide with official endorsement. " British Ivermectin Recommendation Development (BIRD) panel - March 25, 2021

"In 11 randomized trials of moderate/severe infection, there was a 56% reduction in mortality"
"There was a 70% improvement in survival in the subgroup of mild/moderate participants"
Meta-analysis of randomized trials of ivermectin to treat SARS-CoV-2 infection - July 2021
Dr. Andrew Hill, University of Liverpool, UK (lead author and WHO affiliated researcher)

See treatment protocols for all phases of COVID-19 ... including post-COVID ("Long-haul") syndrome at:
https://c19protocols.com
https://covid19criticalcare.com

Contact one of the medical professionals listed in the Directory below for help with COVID-19

If you are a medical professional prescribing IVM for COVID-19 and would like to be listed in the Directory below, please click HERE to provide your information.

DIRECTORY

Information is not guaranteed to be accurate
A particular medical professional currently may not be accepting new patients

MULTIPLE COUNTRIES (Telemedicine)
Dr. Darrell DeMello +91-7718079507 darrelldemello@gmail.com
Dr. Fabio Lopes Bueno Netto +55 (11) 9 9118 5051 Tel / WhatsApp fabio@buenonetto.com (and face to face in São Paulo - Brasil)

AFGHANISTAN
Dr. M. Anwar Noor +93-775313155 anwarnoor285@gmail.com

ARGENTINA
States using IVM: Corrientes, Jujuy, Misiones, Pampa, Salta, Santa Cruz, Tucuman
Dr. Maria Victoria Moreno +54-911-5564-0216 victoriamorenocuttle@gmail.com (Buenos Aires)

AUSTRALIA
Dr. Peter Lewis (IVM) 03 9822 9996

AUSTRIA
Dr. Terezia Novotna novotna.terezia7081@gmail.com

BANGLADESH
Dr. Mohammad Tarek Alam 9120792 93

BELIZE
IVM approved by Belize's Ministry of Health as a prescription treatment option for Covid-19

BERMUDA
Dr. Henry Dowling (441) 296-7296 office@aiih.net https://aiih.net
Dr. Paula Estwick (441) 293-5476 pestwick@nmac.bm https://www.nmac.bm

BOLIVIA
Bolivian government added IVM to its guidelines for treating coronavirus infections in May 2020
Dr. Andres Zurita +79606228793 andreszc1.11.111@gmail.com (consultations by telemedine for all Bolivia)

BRASIL (BRAZIL)
Cities using IVM: Belem, Fortaleza,Itajai, Paranagua, Porto Alegre, Porto Feliz
Dr. Wilton Adriano wadrianocc@gmail.com (Golania, Goias)
Dr. Felipe Dias Wanderley de Carvalho diasds1313@gmail.com (Belo Horizonte, Minas Gerais)
Dr. Lucy Kerr 55 11 3287 3755 (São Paulo)
Dr. Maria de Fátima Gomes de Luna mfgdeluna@gmail.com (Fortaleza, Ceará)
Dr. Carolina Muniz carolina.munizferreira@yahoo.com (Rio de Janeiro)
Dr. Fabio Lopes Bueno Netto 55 (11) 9 9118 5051 Tel / WhatsApp fabio@buenonetto.com (São Paulo)
Dr. Jussara Resende 55 11 98825 6308 (São Paulo)
Dr. Claudia de Bessa Solmucci 55 31 4009 8200 cbsolmucci@gmail.com (Belo Horizonte, Minas Gerais)

BULGARIA
Use of IVM for COVID-19 treatment is common

CANADA
BC CDC, Alberta Health Services: IVM not recommended for COVID-19 outside of approved clinical trials (April 21, 2021)
However, no COVID-19-related IVM clinical trials have been authorized by Health Canada as of July 19, 2021
https://www.canada.ca/en/health-canada/services/drugs-health-products/covid19-industry/drugs-vaccines-treatments/list-authorized-trials.html#a2
See: https://www.canadiancovidcarealliance.org

CAMEROON
Dr. Sam Enoh samuelenohtanya@gmail.com

CZECH REPUBLIC
Physicians can prescribe Ivermectin for COVID-19 patients; then report it in the Infectious Diseases Information System

CUBA
HCQ available; IVM being tested for COVID-19 treatment

DOMINICAN REPUBLIC
IVM is used widely both for prophylaxis and for treatment of COVID-19. Some doctors use HCQ as well.
Dr. José Natalio Redondo Galan josenatalioredondo@gmail.com

ECUADOR
Dr. Mario Zapata Casares drmzc@cidocenter.com

EGYPT
National treatment guidelines issued November 2020

EL SALAVDOR
Government sanctioned protocol includes IVM https://pbs.twimg.com/media/EYmTD7kXsAIh2L_?format=jpg&name=large

FRANCE
IVM generally available for COVID-19 but patient may have to request it ... IVM not included in national guidelines

GUATEMALA
Some municipalities are providing free Covid Kits to those who are sick. The kits include IVM and other items.

HONDURAS
Government approved protocol includes IVM and HCQ

HUNGARY
Clinical trial of IVM for COVID-19 treatment at the South Pest Central Hospital and the National Institute of Pulmonology

INDIA
Much of India has IVM available as a first line of treatment for COVID-19
Dr. Darrell DeMello 7718079507 (Mumbai) darrelldemello@gmail.com also treats long-hauler Covid-19
Dr. Jagadish G Donki 9845917230 (Bangalore) doctor333in@yahoo.co.in also treats long Covid-19 (Post Covid Syndrome)
Dr. Shashikanth Manikappa smanikappa@gmail.com1
Dr. Asiya Kamber Zaidi asiyazaidia@gmail.com

INDONESIA
Ivermectin permission to treat COVID-19 from the Food and Drug Supervisory Agency (BPOM) and from Ministry of Health
https://www.solotrust.com//read/37899/Indonesia-Pakai-Ivermectin-Untuk-Obat-Terapi-Covid-19#

IRELAND
Dr. Pat Morrissey patmorrissey74@protonmail.com
Dr. William 'Billy' Ralph 00353 53 91 36411 billy.ralph@usa.net

ITALY
IVM for COVID-19 information at: https://www.farmagalenica.it/ivermectina-contro-covid-capsule-galeniche-in-farmacia/
Prof. Andrea G Stramezzi, MD, PhD Send a Whatsapp to +39 351 5407910

JAMAICA
Ministry of Health & Wellness does not recommend for or against IVM in COVID-19 treatment (March 2021)
The Ministry recognizes that some doctors are using IVM for treatment of COVID-19

JAPAN
Dr. Haruo Ozaki, chairman, Tokyo Medical Association, recommends use of Ivermectin for COVID-19 patients (9 Feb 2021)
Tokyo Metropolitan Government plans clinical trials of Ivermectin for outpatient treatment of COVID-19 (30 Jan 2021)

MACEDONIA
IVM for COVID-19 treatment approved by MALMED Drug Agency for North Macedonia

MALAYSIA
Health Ministry and Institute for Clinical Research (ICR) clinical trials of Ivermectin for Covid-19
Malaysian Association for the Advancement of Functional and Interdisciplinary Medicine requested immediate Ivermectin use

MEXICO
States using IVM: Chiapas
Mexico City government is giving away COVID-19 kits with Ivermectin & Azythtromycin through kiosks.
Dr. Ariel Ortiz (866) 893-8005 https://obesitycontrolcenter.com

NAMIBIA
My Free Doctor +1 850-750-1322 Text http://www.myfreedoctor.com

NICARAGUA
National treatment guidelines issued January 2021

NIGERIA
Clinical trial approved in Lagos state for Ivermectin treatment of Covid-19

PANAMA
Government has approved and stockpiled IVM and HCQ

PARAGUAY
States using IVM: Alto Parna

PERU
National treatment guidelines issued January 2021
Dr. Gustavo Aguirre Chang Facebook: Gustavo Aguirre
Dr. Yiduv Pettyd Ordoñez Romero yiduv@hotmail.com

PHILIPPINES
A licensed physician may prescribe IVM off label at his/her own discretion in consultation with the patient
Dr. Allan A. Landrito 09323137060 dr.allan.landrito@gmail.com

POLAND
Dr. Włodzimierz Bodnar +48 16 677 00 79 https://przychodnia-przemysl.pl (treatment is with amantadine, not IVM)

PORTUGAL
Dr. Helder Machado helmach@netcabo.pt
Dr. Joaquim Sá Couto jsacouto@mac.com Consultório na Av. da Boavista N° 117, no Porto/Portugal
Dr. José Manuel Sabino de Jesus sabinojesus@sapo.pt

SLOVAKIA
January 27, 2021: The Health Ministry approved the therapeutic use of IVM for six months

SOUTH AFRICA
Court order determines that physicians, on their own judgement, may prescribe IVM for treatment of COVID-19 (April 6, 2021)
Dr. Shankara Chetty 846102030 please WhatsApp
Dr. Erica Drewes 2 721 201 7036 https://drdrewes.agrista.com
Dr. Alex Ekonomakis 117961400
Dr. Chantelle Eybers 716248492 Dreybers@slendermed.co.za
Dr. Liandi Fourie 126530564
Dr. Hema Kalan 126632732 info@drhemakalan.com

Dr. Gerrie Lindeque 568172275 info@comppharm.co.za Whatsapp: 060 528 2910
Dr. Claudia Boitshoko Moloabi info@drclaudiamoloabi.com (IVM prescribed for Covid 19 prophylaxis)
Dr. Zodwa Ngobese 824449268
Dr. Gys du Plessis 104428929
Dr. Marna Turner 834724948
Dr. Mariska van Tonder 792899753
Dr. Clarice Van Vreden 012 259 1059 http://www.ifafimedical.com/contact
Dr. Gerhard Vosloo 123465935
Bendiga House 083/487-4797 info@bendigahouse.org.za https://www.bendigahouse.org.za/
My Free Doctor +1 850-750-1322 Text http://www.myfreedoctor.com

SPAIN
Dr. Nyjon Eccles 0207 224 4622 https://thenaturaldoctor.org/spanish-clinic/

SRI LANKA
Sarva Medical and Wound Care Clinic 076 101 4433 sarva.patient.data@gmail.com
Dr. K T Sundaresan drsundaresan@gmail.com

TAIWAN
Dr. Kai-Jow Tsai https://www.drtsaiclinic.com

TANZANIA
Dr. Leopoldo Salmaso +255686655555 (Whatsapp & Telegram) Also for Italian expatriates

THAILAND
Dr. Aubonrutt Wannawisute LINE ID: audperio; 081-3063061

TRINIDAD AND TOBAGO
Dr. Elias Barrios (868) 2219281 Instagram: dreliasbarrios

UNITED KINGDOM
Dr. Nyjon Eccles +44 (0)207 7224 4622 https://thenaturaldoctor.org

USA
(see below)

VENEZUELA
Government has approved COVID-19 treatment protocol includes IVM and HCQ

ZIMBABWE
The Medicines Control Authority of Zimbabwe (MCAZ) has approved use of IVM for prophylaxis and treatment of COVID-19
Dr. Jackie Stone https://www.facebook.com/jackie.stone.39794

USA

MULTIPLE STATES (Telemedicine)
Dr. Miguel Antonatos (855) 767-8559 https://text2md.com
(States: AL, AZ, CO, FL, GA, GU, IA, ID, IL, KS, KY, MD, ME, MI, MN, MS, ND, NE, NJ, NV, NY, OK, SC, SD, TN, UT, VT, WA, WI, WV)

Nicole Baldwin, ARNP FNP-BC https://www.pushhealth.com/practices/63477/new-patients/narnp
(States: AZ, CO, FL, IA, ID, IN, MA, MD, MO, MT, ND, NJ, NM, NY, WI, WY)

Anne Blanchette, PAC, FNTP https://www.pushhealth.com/practices/99043/new-patients/ablanchette
(States: AZ, FL, ID, IL, UT, WA)

Dr. Rafael F. Cruz www.RegenMedKy.com (Go to website and click blue TELEHEALTH box)
(States: AL, AK, CT, FL, GA, HI, ID, IN, KS, KY, MD, MA, MI, MN, MS, NC, NH, NJ, NV, NY, OH, OK, PA, SC, TN, WV)

Dr. Karen Dalton karen.dalton@mycatholicdoctor.com https://mycatholicdoctor.com/make-appointment/karen-dalton-md-cfcmc/
(States: AL, CO, FL, IA, KS, MI, MN, ND, NH, SD, UT, WI)

Dr. Darrell DeMello +91-7718079507 darrelldemello@gmail.com (located in India; consults in the USA)

JP Denham, ARNP objectivehealthpartnership@pm.me https://www.pushhealth.com/practices/104928/new-patients/jdenham
(States: AZ, FL, ID, MD, MI, OR, WA)

Dr. Alieta Eck (732) 463-0303 eckmds@gmail.com

Dr. Harolyn C. Gilles (602) 909-6347 drlwright007@gmail.com (prescribe non-controlled substances such as IVM in all 50 states)

Dr. Syed Haider (281) 219-7367 Text or better yet sign up: http://www.drsyedhaider.com/
(States: AK, AZ, CO, CT, DE, FL, GA, HI, IA, ID, IL, IN, KS, KY, LA, MA, MD, ME, MI, MO, MT, NC, ND, NE, NH, NJ, NV, NY, OK, OR, PA, SC, SD, TN, TX, UT, VA, VT, WV, WI, WY)

Glenmore Hendricks, RNP glenmore.hendricks@sipmd.com
(States: AZ, CA, IA, MA, MI, MT, OR, TX, VA)

Dr. Eder Hernández DMSc,PA-C (956) 546-2000; (956) 518-7444; (956) 731-6699 www.valleymedcovid19.com

Dr. Richard Herrscher (972) 473-7544 www.aircaremd.com

Dr. Peter Hibberd (561) 655-4477; (561) 725-2356 (text)
(States: FL, TX, CA, IL, CT, IN, KY)

Dr. Joseph N. Holmes (980) 264-9020 Text preferred

Dr. Mollie James www.IvermectinCan.com (telemedicine consults for prevention, active and long-haul)
(States: AR, IA, IL, KY, MO, OK)

Victoria James, APRN, FNP-C victoria@appleadayvirtucalclinic.com https://www.appleadayvirtualclinic.com/
(States: AZ, FL, MD, NV, OR, WA)

Dr. Rob Karas (479) 966-5088; (479) 770-4343 https://karashealthcare.com/

Dr. Kevin Kargman (856) 261-3068 Text
(States: AZ, CT, GA, ID, IN, KY, MI, NJ, OK, WV, WY)

Dr. Michelle Eva Morholt, DNP, FNP-C (360) 230-8070 https://ubucares.com $200 prophylaxis & active treatments with agreement of 2 follow-
(States: FL, UT, WA) up visits to assure safety. Long-haul for our primary care patients only. Call, text, or facetime appointments.

Janna Mustafina CRNP www.ecarenow.net
(States: AZ, CO, DC, FL, MD, NV, RI, UT, WY)

Dr. Clifford F. Porter (512) 553-1501 www.txmedicalcare.com

Dr. Felecia Sumner https://www.pushhealth.com/practices/16805/new-patients/fsumner
(States: AZ, FL, IL, NC, NJ, PA)

Dr. Keri Topouzian (248) 240-0450 askdrt@gmail.com prophylaxis, current infections, long covid
(States: CO, MI, TX)

Patricia Trafford, FNP (480) 496-8340 tricia@anewhealth.org http://www.anewhealth.org

Dr. Michael Uphues muphuesmagic@gmail.com
(States: FL, IL, IN, MT, NV, TN)

Harmony Vance, ARNP https://www.pushhealth.com/practices/23909/new-patients/harmony
(States: FL, MA, MD, NM, NV, WA)

Dr. Arnoldo Padilla Vazquez https://mycatholicdoctor.com/resources/doctors/arnoldo-padilla-vazquez-md/
(States: AL, AZ, CO, FL, GA, IA, ID, IL, KS, MD, ME, MN, MT, ND, NE, NH, NV, OK, OR, SD, TN, UT, VT, WA, WI, WV, WY)

Dr. Marivic Villa (352) 561-6299; (352) 430-4460; Text only (352) 430-8166 VillaHealthCenter.com (Televisit anywhere in US)

Dr. Fred Wagshul (888) 788-9101 LungCenterofAmerica.org

Brian Weinstein MS APN NPC www.synergyhealthdpc.com (all 50 states)

Jennifer Wright MSN, ACP-C https://doctorsstudio.com/i-mask-covid-19-protocol/ (treatment available only via online purchase)

Dr. Anna Yoder, DNP Book an appt at: www.telehealthnp.com Prophylaxis $75; Covid+ $85, long haulers $115
(States: AZ, CA, CO, HI, ID, LA, MN, MO, MT, NC, ND, NE, NV, OR, PA, SD, WA, WV)

America's Frontline Doctors https://www.americasfrontlinedoctors.org/covid-19/how-do-i-get-covid-19-medication
iCareVIP (888) 447-7902 https://icarevip.com
My Free Doctor (850) 750-1322 Text http://www.myfreedoctor.com (all 50 states)

ALABAMA

Dr. David Calderwood (256) 535-5944
Rebecca Halechko, CRNP, FNP-BC (205) 624-4325 southernwellness@outlook.com

ALASKA

Renae Blanton, MSN, FNP-BC renae_b@yahoo.com

ARIZONA

Kayla Berns, RN, BSN (623) 524-4000
Sarah Fuller, FNP-C www.valleymobilemedical.com/covid-19-resources sarah@valleymobilemedical.com (for questions)
Same day appointments available if initiated by 10 am. Visits for treatment, prophylaxis, long-haul starting at $79.

Dr. David Jensen (480) 444-8715 djensenmedical@gmail.com
Dr. Karen E. Lee (520) 395-2220 https://www.tucsonfamilygeriatric.com
Zhanna Tarjeft, FNP-BC (480) 550-9551 z@sproutshealth.com www.sproutshealth.com
Dr. Todd Winton (480) 704-1050 https://activelifestyleclinic.com (In person and Telemedicine available)

ARKANSAS

Dr. Rob Karas (479) 966-5088; (479) 770-4343 https://karashealthcare.com/
Dr. Sharron Mason (501) 463-9079

CALIFORNIA

Dr. Margaret Aranda (800) 992-9280 dra@ArandaMDenterprises.com www.arandaMDenterprises.com
Dr. Joshua Batt https://www.pushhealth.com/practices/488/new-patients/jbatt (Free sign up and initial consult)
Dr. Jose R. Cilliani (714) 541-5252
Dr. Brenden Cochran (425) 361-7945 https://interactivehealthclinic.com (APPOINTMENT REQUIRED - BOOKED INTO SEPT. NO PREVENTATIVE CARE)
Dr. George C. Fareed (760) 351-4400
Dr. Sabine Hazan (805) 339-0221
Dr. Gretchen V. Marsh https://mycatholicdoctor.com/resources/doctors/gretchen-v-marsh-d-o/
Dr. Jorge L. Moreno (323) 726-6289 info@Center-For-Wellness.net (In person and telemedicine)
Dr. Alice Pien (949) 428-4500
Dr. Brian M.Tyson (760) 592-4351
Dr. Tom Yarema DrTom.com/IvermectinInfo

COLORADO
Tracy Dark, FNP (303) 481-8079
Siegfried Emme, FNP (970) 227-0526 ziggyrock1@msn.com www.lovelandmedicalclinic.com
Dr. Katia Meier (303) 790-7860 betterhealth@clearskymedical.com www.clearskymedical.com

CONNECTICUT
Dr. Martin Owen https://mycatholicdoctor.com/make-appointment/martin-owen-m-d/
Dr. Steven Phillips (203) 544-0005
Dr. Robban Sica (203) 799-7733 support@drsica.com www.centerhealingarts.org (prophylaxis, active, long haul)

FLORIDA
Dr. Michael Austin (813) 964-5901 COVID-19_Help@affinitywellness.net
Dr. Bruce Boros (305) 294-0011
Danielle Carrera DNP, APRN Please go to PushHealth.com and use code: DCARRERA (prophylaxis, exposed, positive)
Dr. William J. Cole, Jr. (941) 371-7171 email: DrCole@RetireThePandemic.Com
Janice A. Dennis, FNP, APRRN (561) 847-0573 (call or text) janiceicurn@bellsouth.net
Dr. Bernard Garcia (954) 771-2111
Dr. Stephen E. Grable (904) 247-7455 drgrable.com
Vanessa Hamalian NP (941) 253-2530 Telemed for Florida only. $85/visit. Make telemed appt at: www.latitudeclinic.com
Dr. Peter H. Hibberd (561) 655-4477; 561-725-2356 (text)
Dr. Michael M. Jacobs (850) 912-2000
Dr. Nabeel Kouka (305) 280-0505 info@salus.md www.salus.md
Dr. Jasen Kobobel (321) 636-0005 (appointments only with patients already established with his practice)
Dr. Ben Marble (850) 776-5555
Dr. Michelle Eva Morholt, DNP, FNP-C (360) 230-8070 https://ubucares.com $200 prophylaxis or active, 2 follow-up visits for safety
Dr. Angeli Maun Akey FIRRIMupDoctors@gmail.com (telemedicine)
Dr. William Nields . HeadwatersHealthJax@gmail.com
Dr. Juliana Rajter (954) 906-6000
Dr. Jean-Jacques Rajter (954) 906-6000
Dr. Tara A. Solomon (954) 984-8892 Ext 1 www.drtarasolomon.com
Dr. Juan Pascal Suarez-Lopez (407) 843-0151
Dr. Andres Felipe Velasco (386) 574-1423
Brian Weinstein, NP (888) 329-0120
Dr. Vladimir Zelenko (845) 537-2742 text for appointment https://www.vladimirzelenkomd.com

GEORGIA
Dr. Jason N. Cox (912) 632-6000
Dr. Jimmy A. Malaver jmalaver1@netzero.net prophylaxis for exposed medical personnel; treatment for sick outpatients
Dr. M. Todd Trebony (229) 454-5964 Juvenescence Medical Spa, 91 S Underwood St, Camilla, Ga 31730
USMed Clinic (678) 974-1240

IDAHO
Dr. Ryan N. Cole (208) 472-1082
Cynthia Culp NP-C, IFMCP (208) 888-6886 https://fmidaho.com
Joseph W. Petrie, PAC (208) 833-3773 contact@gemexpresscare.com www.gemexpresscare.com

ILLINOIS
Dr. Alan F. Bain (312) 236-7010 https://docintheloop.com
Dr. William Crevier (708) 349-0070 COVID-19 consultation, prophylaxis, treatment only in our office. Bring any labs, EKGs.

INDIANA
AccuDoc Urgent Care (812) 932-3224 https://www.accudocurgentcare.com
Melissa Donahue, FNP (765) 201-0746
Dr. A Brooks Parker (317) 300-4091 (call to schedule a Zoom meeting; ask for Dr. Parker)

KENTUCKY
Dr. James Buckmaster (270) 831-2004 http://corpuschristi-clinic.com also treats via telemedicine in Tennessee

MAINE
Dr. Dustin Sulak https://integr8health.com/

MARYLAND
Dr. Alan R. Vinitsky enlightened_medicine@yahoo.com

MASSACHUSETTS
Dr. Kathleen O'Neil-Smith FIRRIMupDoctors@gmail.com (telemedicine) Medicare not accepted

MICHIGAN
Dr. Jacqueline Chirco (248) 302-0473 https://askdrt.weebly.com
Dr. James Lewerenz (248) 289-6643 longevityhealthinstitute@yahoo.com https://www.longevityhealthinstituteinc.com/

MINNESOTA

Catherine McCulley, CNP (605) 271-1020 cmcculley@2bhealthy.org www.marywuebbenwellness.com (office visit only)

MISSOURI
Dr. Helen Gelhot (314) 576-0094 md@privatemdstl.com 522 North New Ballas Rd. Suite 122; Creve Coeur, MO 63141
Timothy Hubbard, PA-C (417) 363-3900 info@417housecalls.com www.417housecalls.com
Keri Sutton, NP-C (417) 881-4994 integrativehealthcarespringfieldmo.com
Dr. Luke Van Kirk (417) 351-2900 covid@command.md www.command.md

NEVADA
Dr. Joshua Batt https://www.pushhealth.com/practices/488/new-patients/jbatt (Free sign up and initial consult)
Dr. Arezo M. Fathie (702) 407-9994
Dr. Harolyn C. Gilles (602) 929-6347 drlwright711@icloud.com (Scottsdale) $105 for COVID early or long-haul initial consult
James M. Gocke, APRN (775) 782-1610 jgocke@cvmchospital.org Ironwood Primary Care
Dr. Gretchen V. Marsh https://mycatholicdoctor.com/resources/doctors/gretchen-v-marsh-d-o/
Dr. Patrick G. Ticman (702) 877-5199

NEW HAMPSHIRE
Dr. Robban Sica (203) 799-7733 support@drsica.com www.centerhealingarts.org (prophylaxis, active, long haul)

NEW JERSEY
Dr. Alieta Eck (732) 463-0303 eckmds@gmail.com
Dr. Eric Osgood (no phone calls) drohsogood@gmail.com prophylaxis, early treatment, longhaul
Jennifer Wright MSN, ANP-C www.doctorsstudio.com treatment is available only via online purchase

NEW MEXICO
Stephanie Wilks, FNP-C (575) 433-3000

NEW YORK
Dr. Robert J. Aquino (631) 547-4100
Kathleen Breault NP CNM (518) 944-1637 (Will provide telemedicine)
Dr. Richard Chmielewski (315) 507-4751 www.FalconClinic.com
Dr. Nabeel Kouka (305) 280-0505 info@salus.md www.salus.md
Dr. Elissa Sanchez-Speach mycatholicdoctor.com/resources/doctors/elissa-sanchez-speach-m-d/

NORTH CAROLINA
Dr. Joseph N. Holmes (980) 264-9020 text preferred
Dr. Prachee Jain thehometowndoctor@gmail.com thehometowndoctors.com (COVID-19 positive only; no prophylaxis)
Dr. James Johnston Sign up: yourhomemedicalcare.com home-visit physician for patients within 30 mins of Charlotte beltway
Dr. Jodi Stutts (704) 360-5190 jodi519@hotmail.com (COVID-19 positive patients only; no prophylaxis)

OHIO
Dr. Trent Austin (513) 845-4558 www.accudocurgentcare.com
Dr. A. Patrick Jonas (937) 427-7540
Dr. Jennifer Pfleghaar (567) 336-6001
Dr. Brad Schneider (234) 414-0215
Dr. Fred Wagshul (888) 788-9101

OKLAHOMA
Dr. Gayle Bounds (405) 224-6484 drdee55@earthlink.net
Dr. Curt Coggins (918) 245-1328 St. John Clinic, Ascension; Sand Springs. Practice is closed to new patients.
Dr. Randy Grellner (918) 725-1599
Dr. Jim Meehan (918) 600-2240 www.meehanmd.com
Laura Moreno, FNP (405) 861-0224
Dr. James Ross (918) 932-2909
Dr. Kerri Williams www.medclub.clinic (prophylaxis, current infection, long COVID)

PENNSYLVANIA
Dr. Alexis S. Lieberman (215) 774-1166 only patients under age 18
Dr. Safiyya Shabazz (215) 924-2440 https://www.fountainmedonline.com/contact
Dr. Regina Smith (717) 795-9566

SOUTH CAROLINA
Carolina Health & Wellness Services (843) 996-4908 admin@chwpeds.com Telehealth for Virginia and South Carolina
Dr. Martin Owen https://mycatholicdoctor.com/make-appointment/martin-owen-m-d/

SOUTH DAKOTA
Catherine McCulley, CNP (605) 271-1020 cmcculley@2bhealthy.org www.marywuebbenwellness.com (office visit only)

TENNESSEE
Dr. George Graves; Danny Nelson FNP (423) 949-2171 DrGeorgeGraves@Gmail.com
Dr. Dawn Linn (615) 551-9707 drdawnlinn@gmail.com impressionshendersonville.com (COVID-19+ only; no prophylaxis)

TEXAS

Dr. Robin Armstrong	(409) 938-5000		
Dr. Kimberly Barbolla	(903) 320-3200		
Dr. Hong Davis	(972) 867-5888	call or text.	hormonedrd@gmail.com
Dr. Alison Garza	(956) 393-2200	https://www.dralisongarza.net/contact	
Susan Harris, MSN, CNM, FNP-C	(972) 304-6400	tharris@lifestreammed.com	http://lifestreammed.com
Dr. Eder Hernández DMSc,PA-C	(956) 546-2000; (956) 518-7444; (956) 731-6699	www.valleymedcovid19.com	
Dr. Richard Herrscher	(972) 473-7544	www.aircaremd.com	
Dr. Deborah M. Holubec	(214) 509-9691	rpcc.dholubec@protonmail.com	
Dr. Stella Immanuel	(281) 530-1230		
April E. López NP, MSN	(956) 627-5555		
Dr. Ivette Lozano	(214) 660-1616		
Cynthia Malowitz, ANP-BC, FNP-C	(361) 937-2121 or (361) 937-2124	www.bayareaquickcare.com	$35 telemedicine visit for uninsured
Raynell Odom, FNP	(830) 391-0877		
Dr. Russell Phillips	(469) 916-4436	russellp@thecellspa.com	www.thecellspa.com
Dr. Clifford F. Porter	(512) 553-1501		www.txmedicalcare.com
Dr. Brian Procter	(972) 562-8388		
Wendy Starnes, APRN, NP	(903) 320-3200		
Dr. David Sheridan	(281) 705-6690	dps@pmlctex.com	Available for telemedicine - email or call
Dr. Cami Jo Tice-Harrouff, DNP		camijo.ticeharouff@mycatholicdoctor.com	
Dr. Ibidunni Omolayo Ukegbu	(469) 453-2008	https://pearlmedclinic.com	
Dr. Barry Ungerleider		https://preventionwithivermectin.com	Telemedicine consult $250 if RX issued
Dr. Richard G. Urso	(713) 668-6828		

UTAH

Dr. David Jensen	(480) 444-8715	djensenmedical@gmail.com	
Dr. Michelle Eva Morholt, DNP, FNP-C	(360) 230-8070	https://ubucares.com	$200 prophylaxis or active, 2 follow-up visits for safety

VIRGINIA

Carolina Health & Wellness Services	(843) 996-4908	admin@chwpeds.com	Telehealth for Virginia and South Carolina
Dr. Mary Ellen Gallagher	(703) 527-6664	dr.meg@comcast.net	including pediatric care

WASHINGTON

Dr. Brenden Cochran	(425) 361-7945	https://interactivehealthclinic.com	(APPOINTMENT REQUIRED - BOOKED INTO SEPT. NO PREVENTATIVE CARE)
Dr. Carrie Hardy	(360) 629-2222	https://stanwoodintegrativemedicine.com	
Dr. Michelle Eva Morholt, DNP, FNP-C	(360) 230-8070	https://ubucares.com	$200 prophylaxis or active, 2 follow-up visits for safety

WISCONSIN

Dr. Kristen Lindgren	(920) 737-1625	www.Lindgren.Health	
Dr. Steven Meress	(920) 922-5433	nurse@foxvalleywellness.com	https://foxvalleywellness.com
Dr. Kristen Reynolds		goldenreyenergy@gmail.com	https://www.goldenreyenergy.com
Dr. John E. Whitcomb	(262) 784-5300	info@LiveLongMD.com	(early and long COVID-19 patients)

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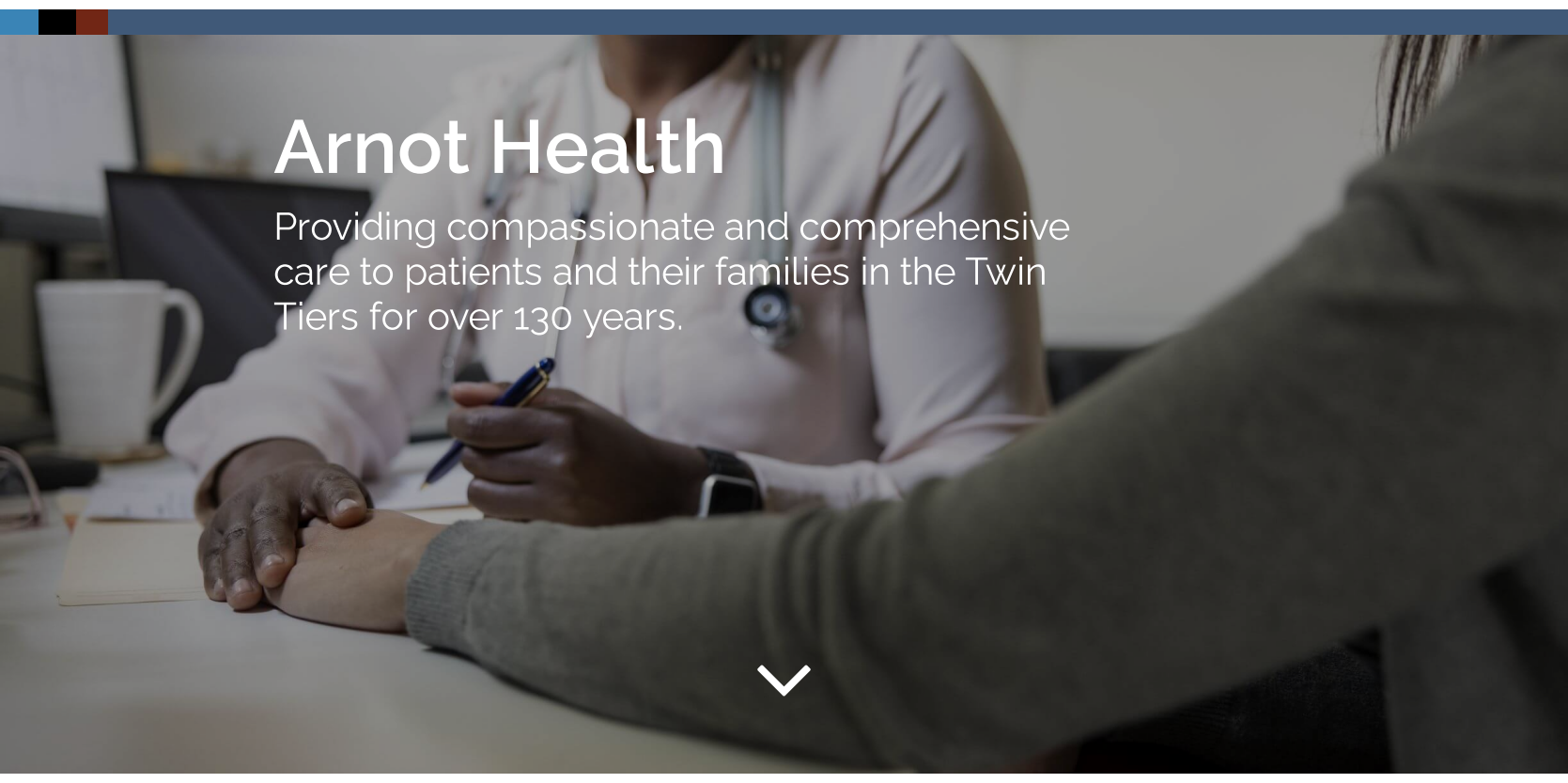


Get the Healthcare You Deserve

You're at your most vulnerable when you're sick or battling chronic illness and pain. In this situation, you and your family deserve a team of highly-experienced physicians and medical professionals who have been trained not only to take care of you but to care about you and your loved ones. The Arnot Health system provides comprehensive care using state-of-the-art technology to give you the medical services you need. Explore the range of specialties practiced at Arnot or get in touch with a service provider trained to treat your specific condition.

Specialty Services

There is strength in knowledge. Learn more about specialty practice areas and be seen by one of our experienced providers.

Primary Care/Family Medicine

Arnot Health offers Primary Care and Family Medicine providers in several convenient locations throughout the Southern Tier.

Walk-in Care

Arnot Health offers the convenience of Walk-in Care at three locations. Care when and where you need it.

X-Ray/Diagnostic Services

X-ray and other diagnostic services (mammography, MRI, CT Scan, Ultrasound, PET Scan, etc.) are available at several locations in the Southern Tier.

Blood Draw/Laboratory

Blood draw and other Laboratory services are available at several Arnot Health locations in the Southern Tier.

Orthopedic Care

Your bones are the base of everything. Make sure they're strong and healthy.

Weight Loss Surgery

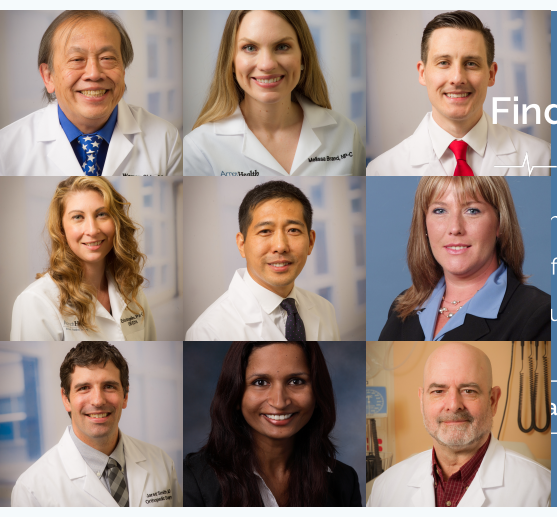
Explore weight-loss surgery options available so you can get started with your healthier life.

Cancer Care

Diagnostic and specialized care are truly lifesavers. Act now to get the care you need.

Heart Care

Be seen by top-rated cardiologists for everything from surgery to preventative heart care.



Find a Doctor or a Service Near You

ner you're looking for a new primary care provider, or in need of a specialist, finding the right doctor first step on the road to recovery. Search for providers based on specialty, location, or practice area u can find one that best fits your needs.

arch Now

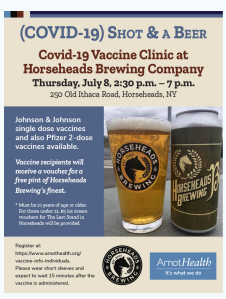
Latest News

Wednesday, August 11, 2021
News & Releases

Free Functional Movement Screening
Free screening at Ira Davenport Memorial Hospital in Bath from 4:00 - 7:00 pm Wednesday, Sept. 1.

Wednesday, July 14, 2021
News & Releases

Arnot Health Expands Visitation Hours
Arnot Health recently announced an expansion of their visiting hours for their hospital facilities.

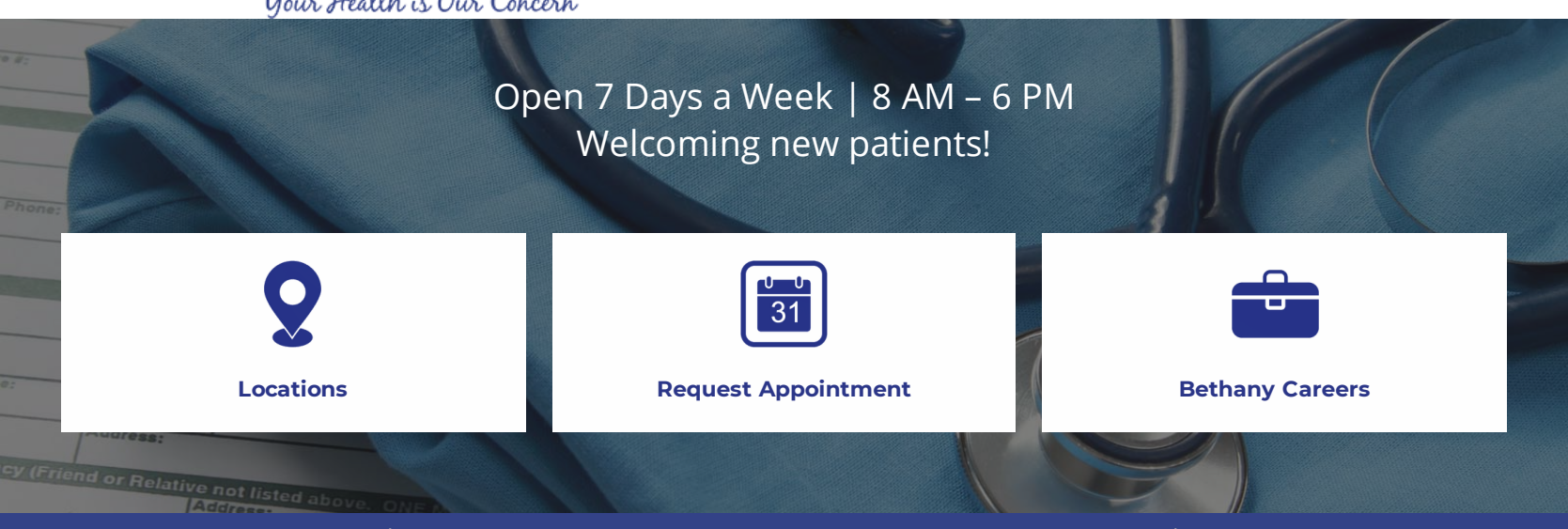


Wednesday, June 30, 2021
News & Releases

(COVID-19) Shot & a Beer
Arnot Health and Horseheads Brewing are teaming up for this COVID-19 vaccination event from 2:30 - 7:00 pm Thursday, July 8 at Horseheads Brewing, 250 Old Ithaca Road, Horseheads, NY.

See All News

2021 © Arnot Health



Open 7 Days a Week | 8 AM – 6 PM
Welcoming new patients!

Locations | **Request Appointment** | **Bethany Careers**

High Point | Greensboro | Winston-Salem | Kernersville | Western Piedmont

The largest independent provider of healthcare in the Triad.

Bethany Medical is open to everyone! No appointments are necessary, we have walk-ins available. We understand that people have busy lives and we are here to help with those unexpected illnesses or injuries.

PRIMARY CARE

We provide Family and Internal Medicine services 7 days a week, no appointment necessary. All providers are accepting new patients.

More Information

GASTROENTEROLOGY

We provide prevention, diagnosis, and treatment of diseases of the digestive tract and liver at our state-of-the-art endoscopy center.

More Information

PAIN MANAGEMENT

Bethany Medical Pain Clinics offer a full spectrum of pain management services including treatment for chronic pain, fibromyalgia, migraines, joint pain, arthritis, back pain, and neck pain.

More Information

Would you like to request an appointment?

Contact Us Today!

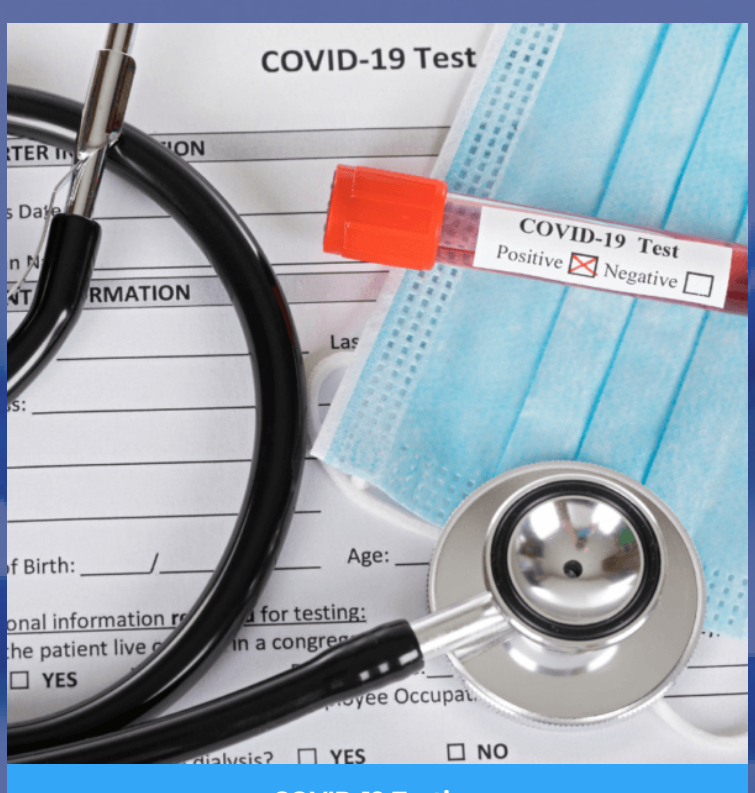
Easy Access. Best Experience.

From Allergy Testing to X-Rays, Bethany Medical offers an array of services to cover your health needs under one roof.

Counseling

Allergy Testing and Treatment

X-Ray & Ultrasounds

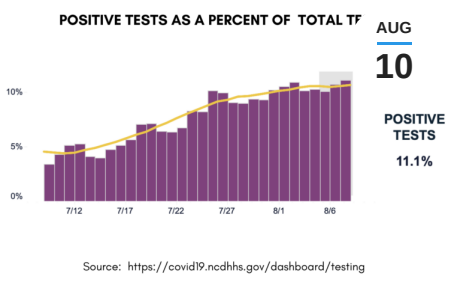


COVID-19 Testing

View All Services

Bethany Medical Patient Corner

Our mission is to provide excellent care through a multi-specialty approach from prevention to the intervention of potentially life-threatening health problems. Read our blog articles below to keep up-to-date with important health news, research, and tips.

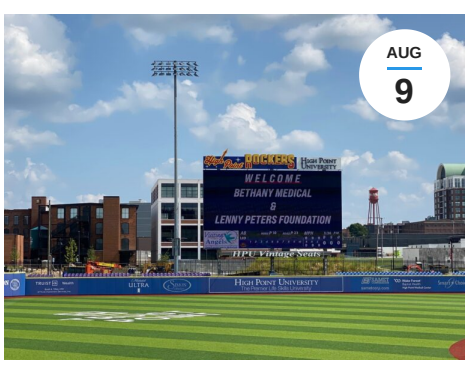


AUG 10

COVID is Again on the Rise

COVID is on the rise, however, vaccination is still highly effective in preventing serious illness-hospitalizations and death in more than 90 percent of cases. If you are not vaccinated, this is still highly advised. Nearly 100 percent of people in hospital ICUs in Greensboro, Winston-Salem, and High Point have not been vaccinated. The newer Delta...

Read more



AUG 9

Bethany Medical Breaks Record at Rockers Stadium

Bethany Medical breaks record for the largest healthcare employee event at the High Point Rockers Stadium on Sunday, August 8th. Bethany treated its front-line employees to an appreciation fun day at the Rockers Stadium with more than 600 employees and their family members in attendance. The event was a coming together to celebrate the employees...

Read more

AUG 1

Gastroparesis: Understanding The Disease

August is gastroparesis disease awareness month. Approximately five million Americans are afflicted with this chronic gastrointestinal disorder, but most Americans don't know what it is. August is dedicated to promoting understanding disease symptoms and causes and disease awareness. What Is Gastroparesis? Gastroparesis, or delayed gastric emptying, causes the stomach to empty its contents very slowly...

Read more

Providers

Keep in mind we have NO business association with any of these providers. Patients are responsible for personally vetting any provider. All of these providers have their own intake process and they all charge for their services. We have no influence or relationship with these providers. We merely provide access to them. Every state's regulations are different and every provider's policies and fees may be different.

The providers listed below are mostly telemedicine providers and they are listed according to the states they are licensed to prescribe in. Some providers are licensed in more than one state. **If a state is not listed, we do not know of a doctor in that state who has stepped up to help people.** We update this page frequently so check back. We do not know of any doctor who has stepped up in Canada or anywhere outside the US. If you find a provider who wants to help people in any part of the world, email us and we will reach out to add them to our network.

If you cannot find someone to help you in our network, you might try to contact speakwithanmd.com, synergyhealthdpc.com, or myfreedoctor.com as they have providers in all states to help you. We are not sure of their protocol but someone may be able to help you.

****All providers are overwhelmed right now so please do NOT contact unless it is urgent (you have symptoms or positive test.)****

***For providers:* we need providers for our network!** If you are a provider currently using or are familiar with this protocol and want to be added to our provider network, complete the form. You can choose to be added **publicly** on the site or added to our **private network** in which we only give out your information to individuals who contact us privately for assistance. Contact us here for any provider-related questions.

State	Provider Name	Phone	Email/Website
Arizona	Sarah Fuller	(480) 861-8605	sarah@valleymobilemedical.com https://www.valleymobilemedical.com/covid-19-resources
Arizona	Patricia Trafford	(480) 496-8340	tricia@anewhealth.org anewhealth.org
Arizona	Forrest Lanchbury	(928) 282-2520	info@sedonaregen.com
California	Tom Yarema	(see website)	DrTom.com/CovidConcern
California	Jose Cillinani	(714) 541-5252	
Colorado	Brian Johnson	(903) 388-5700	bjohnson@aretehealthsystem.com
Connecticut	Robban Sica	(203) 799-7733	support@drsica.com
Florida	Marilyn Smith	(561) 271-0621	mrs97531@aol.com emaresstelehealth.com
Florida	William Cole	schedule through website only	drcole@retirethepandemic.com https://RetireThePandemic.com/Florida
Florida	Rafael F Cruz	(Got to website)	Please go to website below and click on blue box at top of site labeled RESPIRATORY INFECTION IVERMECTIN BUDESONIDE to arrange a telehealth computer zoom consultation. DAILY APPOINTMENTS generally available. www.REGENMEDKy.com
Hawaii	Private listing	Contact us for information	
Illinois	Thomas Hesselink	(630) 844-0011	bioredox@netzero.net http://doctorhesselink.mysite.com
Illinois	Alan Bain	(312) 236-7010	drbain@docintheloop.com
Indiana	Rafael F Cruz	(Got to website)	Please go to website below and click on blue box at top of site labeled RESPIRATORY INFECTION IVERMECTIN BUDESONIDE to arrange a telehealth computer zoom consultation. DAILY APPOINTMENTS generally available. www.REGENMEDKy.com
Kansas	Rafael F Cruz	(Got to website)	Please go to website below and click on blue box at top of site labeled RESPIRATORY INFECTION IVERMECTIN BUDESONIDE to arrange a telehealth computer zoom consultation. DAILY APPOINTMENTS generally available. www.REGENMEDKy.com
Kentucky	Rafael F Cruz	(Got to website)	Please go to website below and click on blue box at top of site labeled RESPIRATORY INFECTION IVERMECTIN BUDESONIDE to arrange a telehealth computer zoom consultation. DAILY APPOINTMENTS generally available. www.REGENMEDKy.com
Louisiana	Pamela Egan	(985) 892-3031	pbegan@eganhc.com
Missouri	Rafael F Cruz	(Got to website)	Please go to website below and click on blue box at top of site labeled RESPIRATORY INFECTION IVERMECTIN BUDESONIDE to arrange a telehealth computer zoom consultation. DAILY APPOINTMENTS generally available. www.REGENMEDKy.com
Montana	Forrest Lanchbury	(928) 282-2520	info@sedonaregen.com
New Hampshire	Robban Sica	(203) 799-7733	support@drsica.com
New Hampshire	Private listing	Contact us for information	
New Jersey	Gloria Cruz	812-913-4416	pohfm2020@gmail.com
New Jersey	Rafael F Cruz	(Got to website)	Please go to website below and click on blue box at top of site labeled RESPIRATORY INFECTION IVERMECTIN BUDESONIDE to arrange a telehealth computer zoom consultation. DAILY APPOINTMENTS generally available. www.REGENMEDKy.com
North Carolina	Rafael F Cruz	(Got to website)	Please go to website below and click on blue box at top of site labeled RESPIRATORY INFECTION IVERMECTIN BUDESONIDE to arrange a telehealth computer zoom consultation. DAILY APPOINTMENTS generally available. www.REGENMEDKy.com
North Dakota	Forrest Lanchbury	(928) 282-2520	info@sedonaregen.com
Ohio	Vicki Delany	(419) 294-7747	mansfieldprimary@delanyhc.com
Oklahoma	Private listing	Contact us for information	
Tennessee	Rafael F Cruz	(Got to website)	Please go to website below and click on blue box at top of site labeled RESPIRATORY INFECTION IVERMECTIN BUDESONIDE to arrange a telehealth computer zoom consultation. DAILY APPOINTMENTS generally available. www.REGENMEDKy.com
Texas	Brian Johnson	(903) 388-5700	bjohnson@aretehealthsystem.com
Texas	Lorina Lujan	(432)307-6331 (office)	Email: admin@occu-health-plus.com Website: occu-health-plus.com For scheduling send: Name; Phone Number; Date of Birth; Email Address. We will contact you and let you know if we can schedule a Tele-Med in your state (Outside of Texas).
Texas	Alexandria Watkins	(432) 268-3773	(text phone for fastest service)
Texas	Jerry Lyons	(817) 349-7541	(text phone for fastest service)
Washington	Rafael F Cruz	(Got to website)	Please go to website below and click on blue box at top of site labeled RESPIRATORY INFECTION IVERMECTIN BUDESONIDE to arrange a telehealth computer zoom consultation. DAILY APPOINTMENTS generally available. www.REGENMEDKy.com
West Virginia	Private listing	Contact us for information	
Wisconsin	Sandra Arce-Garzon	(see website)	RetireThePandemic.com/Wisconsin

*Continued: ...or delay in seeking it because of something you have read on this website. In addition, no one involved in this website has financial ties to any of the suggested therapies. We are merely patient advocates, trying to save lives and fight medical censorship.****

****Medical disclaimer:** This website was created for informational purposes only and has no ties to any drug company or physician. The content is not intended to be a substitute for professional medical advice, diagnosis, or treatment. Always seek the advice of your physician or other qualified health provider with any questions you may have regarding a medical condition. Never disregard professional medical advice or …*

Studies

Papers on Early Treatment and Prophylaxis with HCQ, Vitamin D, Zinc, Nitazoxanide, Ivermectin

HCQ

Date June 30, 2021

Author: Taieb F, et al

Title: Hydroxychloroquine and Azithromycin Treatment of Hospitalized Patients Infected with SARS-CoV-2 in Senegal from March to October 2020

Journal: Journal of Clinical Medicine

Six hundred seventy-four (674) (72.8%) patients received a combination of HCQ and AZM. Results showed that the proportion of patient discharge at D15 was significantly higher for patients receiving HCQ plus AZM (OR: 1.63, IC 95% (1.09–2.43)). Factors associated with a lower proportion of patients discharged alive were: age ≥ 60 years (OR: 0.55, IC 95% (0.36–0.83)), having of at least one pre-existing disorder (OR: 0.61, IC 95% (0.42–0.90)), and a high clinical risk at admission following NEWS score (OR: 0.49, IC 95% (0.28–0.83)). Few side effects were reported including 2 cases of cardiac rhythmic disorders in the HCQ and AZM group versus 13 in without HCQ + AZM. An improvement of clinical status at 15 days was found for patients exposed to HCQ plus AZM combination.

https://www.mdpi.com/2077-0383/10/13/2954

Date: June 4, 2021

Author: Raoult D, et al

Title: Outcomes of 2,111 COVID-19 hospitalised patients treated with hydroxychloroquine/azithromycin and other regimens in Marseille, France: a monocentric retrospective analysis

Treatment with HCQ-AZ was an independent protective factor against death
- Zinc was independently protective against death in patients treated with HCQ-AZ
- Monocentric studies are more valuable than multicentric trials during pandemics"

https://www.mediterranee-infection.com/wp-content/uploads/2020/04/MS-2111-hospitalise%CC%81s-01062021.pdf

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Date: April 6, 2021

Author: Mokhtari M, et al

Journal: International Immunopharmacology

Title: Clinical outcomes of patients with mild COVID-19 following treatment with hydroxychloroquine in an outpatient setting

Findings: Early administration of HCQ reduced the odds of hospitalization by 38%. Early administration of HCQ reduced the odds of death by 73%. In resource-poor countries, HCQ may be still an option for mild COVID-19.

https://www.sciencedirect.com/science/article/pii/S1567576921002721

Date: March 17, 2021

Author: Proctor B, et al

Journal: International Journal of Innovative Research in Medical Science

Title: Early Ambulatory Multidrug Therapy Reduces Hospitalization and Death in High-Risk Patients with SARS-CoV-2

Findings: Our early ambulatory treatment regimen was associated with estimated 87.6% and 74.9% reductions in hospitalization and death respectively, $p<0.0001$. Conclusions: We conclude that early ambulatory, multidrug therapy is associated with substantial reductions in hospitalization and death compared to available rates in the community. Prompt ambulatory treatment should be offered to high-risk patients with COVID-19 instead of watchful watching and late-stage hospitalization for salvage therapies.

https://ijirms.in/index.php/ijirms/article/view/1100

Date: January 15, 2021

Author: Ip A, et al

Journal: BMC Infectious Diseases

Title: Hydroxychloroquine in the treatment of outpatients with mildly symptomatic COVID-19: A multi-center observational study

Findings: Results: Among 1274 outpatients with documented SARS-CoV-2 infection 7.6% were prescribed hydroxychloroquine. In a 1067 patient propensity matched cohort, 21.6% with outpatient exposure to hydroxychloroquine were hospitalized, and 31.4% without exposure were hospitalized. In the primary multivariable logistic regression analysis with propensity matching there was an association between exposure to hydroxychloroquine and a decreased rate of hospitalization from COVID-19 (OR 0.53; 95% CI, 0.29, 0.95). Sensitivity analyses revealed similar associations. QTc prolongation events occurred in 2% of patients prescribed hydroxychloroquine with no reported arrhythmia events among those with data available.

https://bmcinfectdis.biomedcentral.com/articles/10.1186/s12879-021-05773-w

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Date: December 23, 2020

Authors: Cangiano B, et al

Title: Mortality in an Italian nursing home during COVID-19 pandemic

Findings: In this observational study, we described the two-month mortality among the 157 residents (age 60-100) of a nursing home after Sars-CoV-2 spreading.

When evaluating chronic concurrent therapies, we found a statistically significant inverse correlation of vitamin D (cholecalciferol) treatment with mortality (p=0.05). To assess if cholecalciferol chronic treatment was independently associated with a better outcome, we then performed a logistic regression in COVID-19 positive subjects evaluating together all the above mentioned factors significantly associated with mortality (age, gender, ADL scores, BMI and cholecalciferol chronic treatment), confirming the protective role of vitamin D supplementation (p=0.04).

Finally, regression analyses studying COVID-19 specific therapy (O2, hydroxychloroquine, heparin) found only an inverse relation of COVID-19 mortality with hydroxychloroquine therapy (p=0.03)

https://www.aging-us.com/article/202307/text

December 23, 2020

Author:Taccone F, et al

Journal: The Lancet Regional Health - Europe

Title: The role of organizational characteristics on the outcome of COVID-19 patients admitted to the ICU in Belgium

Findings: Treatment with hydroxychloroquine was associated with a lower risk of in-hospital mortality, in line with a previous analysis of the same observational Belgian surveillance data focusing on all hospitalized COVID-19 patients.

https://www.sciencedirect.com/science/article/pii/S2666776220300193

Date: December 2, 2020

Author: Wiseman D, et al

Title: Effective post-exposure prophylaxis of Covid-19 is associated with use of hydroxychloroquine: Prospective re-analysis of a public dataset incorporating novel data.

Findings: We did not detect effects of gender, folate, zinc, or ascorbic acid. CONCLUSIONS: Using novel data with a prospective post hoc re-analysis, hydroxychloroquine, in an age-dependent manner, was associated with reduced illness compatible with Covid-19 or confirmed infection when supplied for post-exposure prophylaxis between 1 and 3 days after high-risk or moderate-risk exposure. This finding warrants prospective confirmation.

https://www.medrxiv.org/content/10.1101/2020.11.29.20235218v1

Date: November 30, 2020

Author: Heras E, et al

Title: COVID-19 mortality risk factors in older people in a long-term care center

Findings: 100 COVID-19+ nursing home patients in Andorra: "multivariate logistic regression analysis identified hydroxychloroquine plus azithromycin treatment as an independent factor favoring survival compared with no treatment or other treatments."

https://link.springer.com/article/10.1007/s41999-020-00432-w

Date: November 24, 2020

Author: Abbas, H

Journal: International Journal of Clinical Practice

Title: Assessment of COVID-19 Treatment containing both Hydroxychloroquine and Azithromycin: A Natural Clinical Trial

Findings: The signs and symptoms of COVID-19 were reduced significantly in response to therapy regimen containing HCQ and azithromycin. The most common reported side effects were stomach pain, hypoglycemia, dizziness, itching, skin rash, QT prolongation, arrhythmia, and conjunctivitis. This natural trial showed that COVID-19 regimen containing both HCQ and azithromycin can be helpful to promote recovery of most patients and reduced their signs and symptoms significantly. It also shows some manageable side effects mostly those related to heart rhythm. In the absence of FDA-approved medications to treat COVID-19, the repurposing of HCQ and azithromycin to control the disease signs and symptoms can be useful.

https://pubmed.ncbi.nlm.nih.gov/33231925/

Date: November 13, 2020

Author: Raoult, et al

Journal: International Journal of Antimicrobial Agents

Title: Pattern of SARS-CoV-2 infection among dependant elderly residents living in long-term care facilities in Marseille, France, March-June 2020

Findings: Data from 1,691 elderly residents and 1,000 members of staff were retrospectively collected through interviewing the medical teams in 24 LTCFs and using the hospitals' electronic health recording systems. 116 (51.4%) patients received a course of oral hydroxychloroquine and azithromycin (HCQAZM) for ≥3 days, and 47 (20.8%) died. Through multivariate analysis, the death rate was positively associated with being male (30.7%, vs. 14.0%, OR=3.95, p=0.002), being older than 85 years (26.1%, vs. 15.6%, OR=2.43, p=0.041), and receiving oxygen therapy (39.0%, vs. 12.9%, OR=5.16, p<0.001) and negatively associated with being diagnosed through mass screening (16.9%, vs. 40.5%, OR=0.20, p=0.001) and receiving HCQ-AZM treatment ≥3 days (15.5%, vs. 26.4%, OR=0.37, p=0.02). Conclusion. High proportion of asymptomatic COVID-19 patients and independent factors for mortality suggests that early diagnosis and treatment of COVID-19 patients in LTCFs may be effective in saving lives.

https://www.sciencedirect.com/science/article/abs/pii/S0924857920304301

Date: November 13, 2020

Author: Sheshaha E, et al

Journal: Diabetes Research and Clinical Practice

Title: Prevalence of Diabetes, Management and Outcomes among Covid-19 Adult Patients Admitted in a Specialized Tertiary Hospital in Riyadh, Saudi Arabia

Findings: Among the treatment options, patients who were given methylpredinosolone, dexamethasone, hydroxychloroquine and azithromycin were significantly less likely to die from Covid-19 by as much as 65%, 80%, 88% and 97%, respectively. Worthy to mention are the protective effects of corticosteroids (dexamethasone and methylprednisolone) as well as hydroxychloroquine from severe Covid-19 outcomes. Hydroxychloroquine in particular protects from Covid-19 death by 88% in the dataset studied. This percentage, while much higher compared to other recent studies done elsewhere [16], [17], [18], reiterates that the use of hydroxychloroquine is associated with reduced Covid-19 mortality. Several studies however do not consider the use of hydroxychloroquine beneficial for Covid-19 treatment [19], [20]. These differences can be partly explained by differences in research methods, some of which were flawed and biased given the premature media attention it received prior to approval [21]. The use of hydroxychloroquine however in Saudi Arabia is approved by the Ministry of Health. Majority (~97%) also received vitamin C, vitamin D.

https://www.sciencedirect.com/science/article/pii/S1319016420302644

Date: November 04, 2020

Author: Di Castelnuovo A, et al

Title: Low dose hydroxychloroquine is associated with lower mortality in COVID-19: a meta-analysis of 26 studies and 44,521 patients

Findings: Overall, the use of HCQ was associated with 21% lower mortality risk (pooled risk ratio: 0.79, 95%CI: 0.67 to 0.93; high level of heterogeneity: I2=82%, random effects). This association vanished (1.10, 95%CI: 0.99 to 1.23 and 1.10, 95%CI: 0.99 to 1.23) when daily dose >400 mg or total dose >4,400 mg were used, respectively). HCQ+AZM was also associated with 25% lower mortality risk, but uncertainty was large (95%CI: 0.50 to 1.13; P=0.17). No association was apparent when only pooling the 4 RCTs (13.8% of the overall weight; pooled risk ratio: 1.11, 95%CI: 0.99 to 1.24). Conclusions: HCQ use was not associated with either increased or decreased mortality in COVID-19 patients when 4 RCTs only were evaluated, while a 7% to 33% reduced mortality was observed when observational studies were also included. The association was mainly apparent when pooling studies using lower doses of HCQ. These findings can help disentangling the debate on HCQ use in COVID-19.

https://www.medrxiv.org/content/10.1101/2020.11.01.20223958v1

Date: October 31, 2020

Author: Risch H et al

Title: Risk of Hospitalization for Covid-19 Outpatients Treated with Various Drug Regimens in Brazil: Comparative Analysis

Journal: Travel Medicine and Infectious Disease

Findings: Use of hydroxychloroquine (HCQ), prednisone or both significantly reduced hospitalization risk by 50-60%. Ivermectin, azithromycin and oseltamivir did not substantially reduce risk further. Hospitalization risk was doubled for people with type-2 diabetes or obesity, increased by two-thirds for people with heart disease, and by 75% for each decade of age over age 40. Similar magnitudes of reduced risk with HCQ and prednisone use were seen for mortality risk, though were not significant because of only 11 deaths among the 717 patients. No cardiac arrhythmias requiring medication termination were observed for any of the medications.

https://www.sciencedirect.com/science/article/pii/S1477893920304026

Date: October 26, 2020

Author: Zelenko V

Title: COVID-19 outpatients – early risk-stratified treatment with zinc plus low dose hydroxychloroquine and azithromycin: a retrospective case series study

Journal: International Journal of Antimicrobial Agents

Findings: After 4 days (median, IQR 3-6, available for N=66/141) of onset of symptoms, 141 patients (median age 58 years, IQR 40-67; 73% male) received a prescription for the triple therapy for 5 days. Independent public reference data from 377 confirmed COVID-19 patients of the same community were used as untreated control. 4 of 141 treated patients (2.8%) were hospitalized, which was significantly less ($p<0.001$) compared with 58 of 377 untreated patients (15.4%) (odds ratio 0.16, 95% CI 0.06-0.5). One patient (0.7%) died in the treatment group versus 13 patients (3.5%) in the untreated group (odds ratio 0.2, 95% CI 0.03-1.5; $p=0.12$). There were no cardiac side effects. Conclusions: Risk stratification-based treatment of COVID-19 outpatients as early as possible after symptom onset with the used triple therapy, including the combination of zinc with low dose hydroxychloroquine, was associated with significantly fewer hospitalizations.

Link: https://www.sciencedirect.com/science/article/pii/S0924857920304258

Date: October 5, 2020

Author: Prodromos C

Title: Hydroxychloroquine is effective, and consistently so used early, for Covid-19: A systematic review

Journal: New Microbes and New Infections

Findings: It was striking that 100% of the 11 studies which used HCQ early in the disease on an outpatient basis showed positive results.… HCQ is consistently effective against COVID-19

when used early in the outpatient setting, it is overall effective against COVID-19, it has not produced worsening, it is safe.

https://www.sciencedirect.com/science/article/pii/S2052297520301281

Pre-print version:
https://drive.google.com/file/d/1R-LtRNsA2ey2Yafm4H0RnSnuvAKJlozv/view?usp=sharing

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Date October 1, 2020

Author: Ayerbe, Ayis, Risco-Risco

Journal: Internal and Emergency Medicine

Title: The association of treatment with hydroxychloroquine and hospital mortality in COVID-19 patients

Findings: Hydroxychloroquine had been used in 1857 patients. Hydroxychloroquine was associated with lower mortality when the model was adjusted for age and gender, with OR (95% CI): 0.44 (0.29–0.67). This association remained significant when saturation of oxygen < 90% and temperature > 37 °C were added to de model with OR 0.45 (0.30–0.68) $p < 0.001$, and also when all the other drugs, and time of admission, were included as covariates. The association between hydroxychloroquine and lower mortality observed in this study can be acknowledged by clinicians in hospitals and in the community.

https://link.springer.com/article/10.1007/s11739-020-02505-x

Date: October 1, 2020

Author: Almazrou, S et al

Journal: Saudi Pharmaceutical Journal

Title: Comparing the impact of Hydroxychloroquine based regimens and standard treatment on COVID-19 patient outcomes: A retrospective cohort study

Findings: Length of hospital stay and time in ICU in for patients who received HCQ based treatment was shorter than those who received SC. Similarly, there was less need for ICU admission and mechanical ventilation among patients who received HCQ based treatment compared with SC, (8.6% vs. 10.7 and 3.1% vs. 9.1%). However, the regression analysis showed no significant difference between the two groups in terms of patient outcomes. HCQ had a modest effect on hospital length stay and days in ICU compared with SC. However, these results need to be interpreted with caution.

https://www.sciencedirect.com/science/article/pii/S1319016420302334

Date: September 30, 2020

Author: Risch H, et al

Title: Randomized Controlled Trials of Early Ambulatory Hydroxychloroquine in the Prevention of COVID-19 Infection, Hospitalization, and Death: Meta-Analysis

Findings: Five randomized controlled clinical trials enrolling 5,577 patients were included. HCQ was associated with a 24% reduction in COVID-19 infection, hospitalization or death, P=.025 (RR, 0.76 [95% CI, 0.59 to 0.97]). No serious adverse cardiac events were reported. The most common side effects were gastrointestinal. Conclusion--Hydroxychloroquine use in outpatients reduces the incidence of the composite outcome of COVID-19 infection, hospitalization, and death. Serious adverse events were not reported and cardiac arrhythmia was rare.

https://www.medrxiv.org/content/10.1101/2020.09.30.20204693v1

Date: September 29, 2020

Title: Early Hydroxychloroquine but not Chloroquine use reduces ICU admission in COVID-19 patients

Findings: Early treatment with HCQ on the first day of admission is associated with a reduced risk of 53% in transfer to the ICU for mechanical ventilation.

https://www.sciencedirect.com/science/article/pii/S1201971220321755

Date: September 29, 2020

Author: Mazhar F, et al

Journal: International Journal of Infectious Diseases

Title: Use of hydroxychloroquine and chloroquine in COVID-19: How good is the quality of randomized controlled trials?

Findings: The use of HCQ on the COVID-19 ward is associated with a decreased risk of transfer to the ICU. After competing risk analysis, the risk of admission to the ICU is reduced by 53%.

This finding suggests that starting early treatment with HCQ (within 1 day of admission) on the regular COVID-ward might prevent progression to critical respiratory illness. This is consistent with the suggestion that HCQ treatment reduces the risk of disease progression more effectively earlier in the course of the disease

https://www.sciencedirect.com/science/article/pii/S120197122032186X

Date: September 24, 2020

Author: Ashinyo M, et al

Journal: The Pan African Medical Journal

Title: Clinical characteristics, treatment regimen and duration of hospitalization among COVID-19 patients in Ghana: a retrospective cohort study

Findings: Based on the data of 244 fully recovered patients, the use of the AZ+CQ combination or HCQ alone shortened the duration of hospitalization compared to the use of AZ only or supportive treatment. This supports the recommendation in the Ghana standard treatment guidelines that if not contraindicated, HCQ or CQ should be used efficiently alone or in combination with AZ to optimize the management of asymptomatic and mild cases of COVID-19.

https://www.panafrican-med-journal.com/content/series/37/1/9/full/

Date: September 15, 2020

Author: Carlucci P, et al.

Journal: Journal of Medical Microbiology

Title: Zinc sulfate in combination with a zinc ionophore may improve outcomes in hospitalized COVID-19 patients

Findings: In univariate analyses, zinc sulphate increased the frequency of patients being discharged home, and decreased the need for ventilation, admission to the ICU and mortality or transfer to hospice for patients who were never admitted to the ICU. After adjusting for the time at which zinc sulphate was added to our protocol, an increased frequency of being discharged home (OR 1.53, 95% CI 1.12–2.09) and reduction in mortality or transfer to hospice among patients who did not require ICU level of care remained significant (OR 0.449, 95% CI 0.271–0.744). This study provides the first in vivo evidence that zinc sulphate may play a role in therapeutic management for COVID-19.

https://www.microbiologyresearch.org/content/journal/jmm/10.1099/jmm.0.001250

Date: September 14, 2020

Author: Lauriola, M., Pani, A., Ippoliti, G., et al.

Journal: Clinical and Translational Science

Title: Effect of combination therapy of hydroxychloroquine and azithromycin on mortality in COVID-19 patients.

In this study, we found a reduced in-hospital mortality in patients treated with a combination of hydroxychloroquine and azithromycin after adjustment for comorbidities. … At multivariable Cox proportional hazard regression analysis, ... use of hydroxychloroquine + azithromycin (vs. no treatment) (HR 0.265, 95%CI 0.171-0.412, p<0.001) was inversely associated [with death].

https://ascpt.onlinelibrary.wiley.com/action/showCitFormats?doi=10.1111%2Fcts.12860

Date: September 13, 2020

Author: Sulaiman T, et al.

Title: The Effect of Early Hydroxychloroquine-based Therapy in COVID-19 Patients in Ambulatory Care Settings: A Nationwide Prospective Cohort Study

Findings: 1,817 patients in the HCQ group vs 3,724 in the SC [supportive care] group. Adjusting for age, gender, and major comorbid conditions, a multivariate logistic regression model showed a decrease in the odds of hospitalisation in patients who received HCQ compared to SC alone (adjusted OR 0.57 [95% CI 0.47-0.69], p-value <0.001). The composite outcome of ICU admission and/or mortality was also lower for the HCQ group compared to the SC group controlling for potential confounders (adjusted OR 0.55 [95% CI 0.34-0.91], p-value 0.019). CONCLUSION: Early intervention with HCQ-based therapy in patients with mild to moderate symptoms at presentation is associated with lower adverse clinical outcomes among COVID-19 patients, including hospital admissions, ICU admission, and/or death.

https://www.medrxiv.org/content/10.1101/2020.09.09.20184143v1

Date: September 8, 2020

Author: Synolaki E, et al.

Title: Activin/Follistatin-axis deregulation is independently associated with COVID-19 in-hospital mortality

Findings: Hydroxychloroquine, azithromycin, antibiotics other than azithromycin, Lopinavir/Ritonavir, low molecular weight heparin (LMWH), anakinra and corticosteroids were found to be independently associated with survival when treatment commenced at FACTCLINYCoD scores <3 (Supplementary Table S7).

https://www.medrxiv.org/content/10.1101/2020.09.05.20184655v1

Date: September 7, 2020

Author: Raoult D, et al

Title: Natural history and therapeutic options for COVID-19

Findings: “Among patients aged 60 years and over who had at least three days of dual HCQ-AZ therapy in our center, the mortality was 3.1%, which was much lower than that reported in China and Italy for the same age group.” China (6.0%), Italy (12.3%)

"After confirming in our cohort that zinc deficiency was associated with an unfavorable prognosis, and in view of a comparative study in favor of zinc [144], 15 mg of zinc three times daily was added."

https://www.mediterranee-infection.com/wp-content/uploads/2020/09/ERM-2020-0073.R1_Proof_hi.pdf

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Date: September 1 & August 27, 2020

Author: Raoult D, et al

Title: REAL-TIME META-ANALYSIS FOR HCQ / MORTALITY / COVID

Findings: HCQ saves lives, reveals meta-analysis of 14 clinical studies of physicians treating COVID-19 patients.

The clinical studies include 4,121 patients from 7 countries, with summary odds ratio [showing benefit for HCQ] 0.60, 95% confidence interval 0.50-0.73, p=10-7 58). Results were consistent among studies (I2 59 =20%, p=0.23).

https://www.mediterranee-infection.com/meta-analyse-en-temps-reel-pour-hcq-mortalite-covid/

https://www.mediterranee-infection.com/wp-content/uploads/2020/04/Response-to-Fiolet-et-al-Manuscript.pdf

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Date: August 25, 2020

Author: DiCastelnuovo A, et al.

Journal: European Journal of Internal Medicine

Title: Use of hydroxychloroquine in hospitalised COVID-19 patients is associated with reduced mortality: Findings from the observational multicentre Italian CORIST study

Findings: After adjustment for propensity scores, we found 30% lower risk of death in patients receiving HCQ (HR=0.70; 95%CI: 0.59 to 0.84; E-value=1.67). Secondary analyses yielded similar results. The inverse association of HCQ with inpatient mortality was particularly evident in patients having elevated C-reactive protein at entry.

HCQ use was associated with a 30% lower risk of death in COVID-19 hospitalized patients. Within the limits of an observational study and awaiting results from randomized controlled trials, these data do not discourage the use of HCQ in inpatients with COVID-19.

https://www.sciencedirect.com/science/article/abs/pii/S0953620520303356

Date: August 24, 2020

Author: Catteau L, Dauby N, et. al.

Title: Low-dose Hydroxychloroquine Therapy and Mortality in Hospitalized Patients with COVID-19: A Nationwide Observational Study of 8075 Participants

Findings: Of 8075 patients with complete discharge data on 24th of May and diagnosed before the 1st of May, 4542 received HCQ in monotherapy and 3533 were in the no-HCQ group. Death was reported in 804/4542 (17.7%) and 957/3533 (27.1%), respectively. In the multivariable analysis, the mortality was lower in the HCQ group compared to the no-HCQ group (adjusted hazard ratio [HR] 0.684, 95% confidence interval [CI] 0.617–0.758). Compared to the no-HCQ group, mortality in the HCQ group was reduced both in patients diagnosed ≤ 5 days (n=3975) and > 5 days (n=3487) after symptom onset (adjusted HR 0.701, 95% CI 0.617–0.796 and adjusted HR 0.647, 95% CI 0.525–0.797, respectively).

Conclusions: Compared to supportive care only, low-dose HCQ monotherapy was independently associated with lower mortality in hospitalized patients with COVID-19 diagnosed and treated early or later after symptom onset.

Link: https://www.sciencedirect.com/science/article/abs/pii/S0924857920303423

Date: August 20, 2020

Author: Dubernet A, et al

Journal: Journal of Global Antimicrobial Resistance

Title: A comprehensive strategy for the early treatment of COVID-19 with azithromycin/hydroxychloroquine and/or corticosteroids: results of a retrospective observational study in the French overseas department of Reunion Island

"The main intervention was early treatment with hydroxychloroquine/azithromycin."

Small sample but 0 deaths. Also only 1 ICU admission in early treatment group (vs 9 who didn't receive HCQ or only received it after ICU admission) .

https://www.sciencedirect.com/science/article/pii/S221371652030206X

Date: August 18, 2020

Clinical portrait of the SARS-CoV-2 epidemic in European cancer patients.

Author: Pinato DJ et al

Journal: Cancer Discovery

Findings: In a multi-center study of 890 cancer patients with confirmed Covid-19 … exposure to antimalarials was associated with improved mortality rates independent of baseline prognostic factors. Using multivariate Cox regression models and restricted mean survival time analyses, exposure of antimalarials emerged as an independent predictor of patients' survival compared to untreated controls. It should be emphasised that a direct cause-effect relationship between exposure to each agent and mortality from Covid-19 cannot be inferred due to the observational, retrospective nature of our study and the high proportion of patients treated with concomitant therapies. This is particularly true for anti-virals and tocilizumab. However, the association we observed is highly provocative, as it supports ongoing clinical research focusing on Covid-19 specific therapies in cancer patients, a population where mortality from SARS-Cov-2 is particularly high and influenced by a number of competing factors including high co-morbid burden and active malignancy.
https://cancerdiscovery.aacrjournals.org/content/early/2020/08/18/2159-8290.CD-20-0773.full-text.pdf

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Date: August 18, 2020

Author: Raoult D, et al.

Title: Pattern of SARS-CoV-2 infection among dependent elderly residents living in retirement homes in Marseille

Findings: COVID-19 patients in retirement homes in Marseille, France receiving HCQ-AZ treatment for at least 3 days had lower death rate (14.4% vs. 27.8%, OR=0.41, p=0.017).

https://www.mediterranee-infection.com/wp-content/uploads/2020/08/Abstract-COVID-EHPAD.pdf

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Date: August 18, 2020

Author: Gonzalez MM, et al

Title: The Prognostic Value of Eosinophil Recovery in COVID-19: A Multicentre, Retrospective Cohort Study on Patients Hospitalised in Spanish Hospitals.

Findings: Corticosteroid treatment was not found to correlate with death in our model whereas both hydroxychloroquine and azithromycin correlated with a lower mortality rate. Notably, both elevated ALT upon admission and at seven days of hospitalisation correlated with a lower mortality rate. More studies are needed to clarify this finding. Another finding in our study is the protective effect of both hydroxychloroquine and azithromycin observed in our model. Eosinophil recovery was found to correlate with a lesser chance of worse progress. Eosinophil-recoverers were more frequently treated with hydroxychloroquine and less frequently treated with systemic or inhaled glucocorticoids."

https://www.medrxiv.org/content/10.1101/2020.08.18.20172874v1.full.pdf

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Date: August 17, 2020

Author: Mohana, A et al

Title: Hydroxychloroquine Safety Outcome within Approved Therapeutic Protocol for COVID-19 Outpatients in Saudi Arabia

Findings: Saudi Arabian Ministry of Health implemented protocol for suspected COVID-19 patients with mild to moderate symptoms using HCQ + zinc sulphate as the recommended treatment of choice. Among 2,733 patients in study no ICU admission or death were reported.

https://www.medrxiv.org/content/10.1101/2020.08.16.20175752v1

Date: August 7, 2020

Authors: McCullough P, et al

Journal: The American Journal of Medicine

Title: Pathophysiological Basis and Rationale for Early Outpatient Treatment of SARS-CoV-2 (COVID-19) Infection

Findings: Acute COVID-19 has a great range of clinical severity from asymptomatic to fatal. In the absence of clinical trials and guidelines, with hospitalizations and mortality mounting, it is prudent to deploy treatment for COVID-19 based upon pathophysiological principles. We have proposed an algorithm based on age and comorbidities that allows for a large proportion to be monitored and treated at home during self-isolation with the aim of reducing the risks of hospitalization and death.

https://www.sciencedirect.com/science/article/pii/S0002934320306732

Date: August 3, 2020

Author: Yu, B., Li, C., Chen, P. et al.

Journal: Sci. China Life Sci. (2020).

Title: Beneficial effects exerted by hydroxychloroquine in treating COVID-19 patients via protecting multiple organs.

Findings: HCQ treatment started early (within 5 days of admission) resulted in a lower fatality rate than that started after 5 days of admission (1/73 (1.4%) vs. 8/205 (3.9%)) The proportion of patients who turned critically ill was lower in the HCQ group than in the NHCQ group (0.43% (1/231) vs. 2.48% (32/1291); $P<0.05$). HCQ treatment can reduce systemic inflammation and inhibit the cytokine storm, thus protecting multiple organs from inflammatory injuries. HCQ treatment started early (within 5 days of admission) exerted a better effect in reducing IL-6

levels than that started 5 days after admission (2.6 (1.5–4.5) pg mL–1 vs. 3.7 (1.9–8.5) pg mL–1 on the 10th day of treatment; P<0.05). Similarly, HCQ treatment started early exerted a better effect in elevating albumin levels than that started 5 days after admission (40.5 (35.0–42.6) g L–1 in the HCQ group vs. 35.7 (32.5–39.5) g L–1 in the NHCQ group on the 5th day following treatment; P<0.05) and (39.8 (35.4–42.4) g L–1 in the HCQ group vs. 37.4 (33.3–39.6) g L–1 in the NHCQ group on the 10th day following treatment; P<0.05). These results suggest that HCQ treatment should be started early following hospitalization.

https://link.springer.com/content/pdf/10.1007/s11427-020-1782-1.pdf

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Date: July 29, 2020

Author: Monforte A

Journal: International Journal of Infectious Diseases

We divided a subset of our cohort in three groups who started treatment a median of 1 day after admission.… After adjusting for a number of key confounders, the use of hydroxychloroquine + azithromycin was associated with a 66% reduction in risk of death as compared to controls; the analysis also suggested a larger effectiveness of hydroxychloroquine in patients with less severe COVID-19 disease ($PO_2/FiO_2 > 300$, interaction p-value<.0001). Our results are remarkably similar to those shown by Arshad et al.

https://www.ijidonline.com/article/S1201-9712(20)30600-7/fulltext

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Date: July 16, 2020

Author: Hong KS et al (Korea)

Journal: Infection and Chemotherapy

Title: Early Hydroxychloroquine Administration for Rapid Severe Acute Respiratory Syndrome Coronavirus 2 Eradication

Findings: "Early administration of HCQ significantly ameliorates inflammatory cytokine secretion by eradicating COVID-19, at discharge. Our findings suggest that patients confirmed of COVID-19 infection should be administrated HCQ as soon as possible. Our data reveals that early administration of HCQ is associated with shorter viral shedding duration and a higher rate of viral clearance after 30 days, despite the initial assessment of high disease severity."

https://icjournal.org/Synapse/Data/PDFData/0086IC/ic-52-e43.pdf

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Date: July 14, 2020

Author: Raoult, Didier et al

Title: Response to David Spencer from Didier Raoult, et al.

Findings: "We have recently carried out a meta-analysis of all the work done on 58 hydroxychloroquine. … This new meta-analysis included 18,211 patients (10,409 treated by a 66 chloroquine derivative) from 12 studies and assessed mortality in 4 countries. … The body of publications shows that hydroxychloroquine therapy is significantly and reproducibly correlated with a two-fold decrease in both mortality and viral shedding."

https://www.mediterranee-infection.com/wp-content/uploads/2020/07/Response-to-Mr.-David-Spencer-ELSEVIER.pdf

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Date: July 3, 2020

Author: Zelenko V, et al

Title: COVID-19 Outpatients – Early Risk-Stratified Treatment with Zinc Plus Low Dose Hydroxychloroquine and Azithromycin: A Retrospective Case Series Study

Findings: Risk stratification-based treatment of COVID-19 outpatients as early as possible after symptom onset with the used triple therapy, including the combination of zinc with low dose hydroxychloroquine, was associated with significantly less hospitalizations and 5 times less all-cause deaths.

https://www.preprints.org/manuscript/202007.0025/v1

Date: July 2, 2020

Author: Arshad S, et al

Journal: International Journal of Infectious Diseases

Title: Treatment with Hydroxychloroquine, Azithromycin, and Combination in Patients Hospitalized with COVID-19

Findings: In this multi-hospital assessment, when controlling for COVID-19 risk factors, treatment with hydroxychloroquine alone and in combination with azithromycin was associated with reduction in COVID-19 associated mortality. The benefits of hydroxychloroquine in our cohort as compared to previous studies may be related to its use early in the disease course with standardized, and safe dosing, inclusion criteria, comorbidities, or larger cohort. Overall, 2,541 consecutive patients were included in the analyses with a median age of 64 years (IQR: 53-76 years), 51% male, 56% African American, median inpatient LOS was 6 days (IQR: 4-10 days). "Roughly 82% of the patients began receiving hydroxychloroquine within 24 hours and 91% within 48 hours, a factor Dr. Marcus Zervos identified as a potential key to the medication's success"

https://www.ijidonline.com/article/S1201-9712(20)30534-8/pdf

Date: July 2, 2020

Author: Bhandari S, et al

Title: Characteristics, Treatment Outcomes and Role of Hydroxychloroquine among 522 COVID-19 hospitalized patients in Jaipur City: An Epidemio-Clinical Study

Findings: It was observed that putative definitive management protocol with HCQ enhances the chances of early recovery, modulating the overall mortality profile of COVID-19.

https://www.japi.org/v2c474c4/characteristics-treatment-outcomes-and-role-of-hydroxychloroquine-among-522-covid-19-hospitalized-patients-in-jaipur-city-an-epidemio-clinical-study

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Date: June 30, 2020

Author: Mikami T

Journal: Journal of General Internal Medicine

Title: Risk Factors for Mortality in Patients with COVID-19 in New York City

Findings: In this retrospective study of over 6000 ambulatory and hospitalized patients with COVID-19 in the New York City metropolitan area … Hydroxychloroquine use was associated with decreased mortality. Hazard ratio 0.53 (0.41–0.67)

https://link.springer.com/article/10.1007/s11606-020-05983-z

Date: June 25, 2020

Author: Lagier J, et al.

Title: Outcomes of 3,737 COVID-19 patients treated with hydroxychloroquine/azithromycin and other regimens in Marseille, France: A retrospective analysis

Findings: Our approach of early diagnosis and care of as many patients as possible results in much lower mortality rates than other strategies. Our global mortality rate was 0.9%, and the mortality rate was 0.5% among patients treated with HCQ-AZ ≥ 3days. Whereas no death was observed in patients <60 years old in our study, the proportion of deaths under 60 years was 3.5, 4.3, 9.8 and 19% respectively in Italy, in grand Est region, France, in Ile de France region and in China, respectively. HCQ-AZ ≥3 days was an independent protective factor against death and/or transfer to ICU (death hazard ratio (HR) 0.49, 95% confidence interval (0.25–0.97)) (Table 5, Fig. 3). Finally, the significant association between treatment with HCQ-AZ≥3days and reduction of risk of death was confirmed to be independent of age, comorbidities and severity of the disease, by two different propensity score methods.

https://www.sciencedirect.com/science/article/pii/S1477893920302817

Date: June 12, 2020

Author: Oteo, J, et al.

Title: A short therapeutic regimen based on hydroxychloroquine plus azithromycin for the treatment of COVID-19 in patients with non-severe disease. A strategy associated with a reduction in hospital admissions and complications.

Findings: we implemented a ... treatment outside the hospital with hydroxychloroquine plus azithromycin ... associated with a reduction in the burden of hospital ... successful in terms of the number of patients who have developed serious complications. "None of our patients have died in the 30 days of follow-up."

https://www.medrxiv.org/content/10.1101/2020.06.10.20101105v1

Date: May 22, 2020

Author: Ahmad I, et al.

Title: Doxycycline and Hydroxychloroquine as Treatment for High-Risk COVID-19 Patients: Experience from Case Series of 54 Patients in Long-Term Care Facilities

Findings: DOXY and HCQ combination therapy is known to be anti-inflammatory, and immunomodulatory in both in-vitro and in-vivo studies. In addition, HCQ has anti-viral properties. Although this sample size is small (n=54), the results suggest that early intervention of DOXY-HCQ may improve the clinical outcome of high-risk COVID-19 patients suffering from moderate-severe symptoms in LTCF. These data is also associated with a reduction of hospitalization by 44% among moderate to high severity COVID-19 LTCF residents compared with previously reported data by similar populations from King county, Washington18.

https://www.medrxiv.org/content/10.1101/2020.05.18.20066902v1.full.pdf

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Date: June 10, 2020

Author: Leiden emeritus professor of mathematical statistics Richard Gill

Findings: "There is a good chance that HCQ is effective in the treatment of Covid-19 in primary health care. Leiden emeritus professor of mathematical statistics draws this conclusion after an audit of two patient studies that used statistical analyzes."

https://world-today-news.com/controversial-drug-hydroxychloroquine-still-seems-valuable-i/

Date: June 9, 2020

Title: Malaysia Finds Hydroxychloroquine Can Slow Covid-19 Progress

Findings: Health director-general Dr Noor Hisham Abdullah said the off-label usage of HCQ has managed to delay Covid-19 progression among patients in Malaysia.

https://codeblue.galencentre.org/2020/06/09/malaysia-finds-hydroxychloroquine-can-slow-covid-19-progress/

Date: June 9, 2020

Title: Costa Rica to resume use of HCQ

Findings: In Costa Rica, all patients — including those with minor symptoms or who are asymptomatic — are offered the option to take hydroxychloroquine. ... It has a low case fatality rate (.75%), and < 5% of known active cases are currently hospitalized.

https://ticotimes.net/2020/06/08/costa-rica-to-resume-use-of-hydroxychloroquine-for-covid-19-treatment

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Date: June 8, 2020

Author: Million M, et al

Title: Clinical Efficacy of Chloroquine derivatives in COVID-19 Infection: Comparative meta-analysis between the Big data and the real world

Findings: Twenty clinical studies were identified involving 105,040 patients (19,270 treated)." Chloroquine derivatives "reduce mortality by a factor 3 in patients infected with COVID-19.

https://www.sciencedirect.com/science/article/pii/S2052297520300615

Date: May 30, 2020

Author: Guerin, Violaine

Title: Azithromycin and Hydroxychloroquine Accelerate Recovery of Outpatients with Mild/Moderate COVID-19

Findings: Eighty-eight patients received either no or a symptomatic treatment (NST) (n=34) or AZM alone (n=34) or AZM+HCQ (n=20). The efficacy end point was the time to clinical recovery and the safety end point was the occurrence of cardiovascular events. The mean (SD) times to achieve clinical recovery were respectively 25.8 days (11.1), 12.9 days (13.4) and 9.2 days (9.3), showing a statistically significant difference between NST and AZM alone ($p<0.0001$) or

AZM+HCQ ($p<0.0001$). To improve the evidence level, a case-control analysis was performed on a sample of 57 patients (19/group) matched for age, sex and BMI. The statistical difference between NST and AZM was confirmed ($p=0.0149$) as well as the difference with AZM+HCQ ($p=0.0002$). No cardiac toxicity was recorded in any patient. No statistical difference was shown between AZM and AZM+HCQ groups, although the dual therapy tended to be more effective in patients over 50 years, based on an analysis using the cox model. In conclusion, AZM and AZM+HCQ favourably impacted the course of the disease.

https://www.preprints.org/manuscript/202005.0486/v1

Date: May 27, 2020

Author: Risch H
Title: Early Outpatient Treatment of Symptomatic, High-Risk Covid-19 Patients that Should be Ramped-Up Immediately as Key to the Pandemic Crisis.

Findings: Evidence about use of hydroxychloroquine alone, or of hydroxychloroquine + azithromycin in inpatients, is irrelevant concerning efficacy of the pair in early high-risk outpatient disease. Five studies, including two controlled clinical trials, have demonstrated significant major outpatient treatment efficacy. Hydroxychloroquine+azithromycin has been used as standard-of-care in more than 300,000 older adults with multicomorbidities, with estimated proportion diagnosed with cardiac arrhythmias attributable to the medications 47/100,000 users, of which estimated mortality is <20%, 9/100,000 users, compared to the 10,000 Americans now dying each week. These medications need to be widely available and promoted immediately for physicians to prescribe.

https://academic.oup.com/aje/advance-article/doi/10.1093/aje/kwaa093/5847586

Date: May 5, 2020

Author: Million M, et. al
Title: Early Treatment of COVID-19 Patients With Hydroxychloroquine and Azithromycin: A Retrospective Analysis of 1061 Cases in Marseille, France

Findings: A total of 1061 patients were included in this analysis (46.4% male, mean age 43.6 years - range 14-95 years). Good clinical outcome and virological cure were obtained in 973 patients within 10 days (91.7%). Administration of the HCQ+AZ combination before COVID-19 complications occur is safe and associated with a very low fatality rate in patients.

https://pubmed.ncbi.nlm.nih.gov/32387409/

Date: May 5, 2020

Author: Novales, M et. al.
Title: Early Hydroxychloroquine Is Associated with an Increase of Survival in COVID-19 Patients: An Observational Study

Findings: According to clinical picture at admission, hydroxychloroquine increased the mean cumulative survival in all groups from 1,4 to 1,8 times. Conclusions: in a cohort of 166 patients from 18 to 85 years hospitalised with COVID-19, hydroxychloroquine treatment with 800mg added loading dose increased survival when patients were admitted in early stages of the disease. There was a non-statistically significant trend towards survival in all groups.

https://www.preprints.org/manuscript/202005.0057/v1

Date: May 2020

Author: Robert C Bransfield, MD, DLFAPA

Title: Lyme Disease, COVID-19 & Prophylactic & Early Treatment Strategies

Link:
https://drive.google.com/file/d/1qBsVsXSCTZk-Cww6TJ9zS-4eW2t89Of1/view?usp=sharing

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Date: April 17, 2020

Author: Esper R

Title: Empirical treatment with hydroxychloroquine and azithromycin for suspected cases of COVID-19 followed-up by telemedicine

Findings: Of the 636 symptomatic outpatients, 412 started treatment with hydroxychloroquine and azithromycin and 224 refused medications (control group). Need for hospitalization was 1.9% in the treatment group and 5.4% in the control group

Link:

https://pgibertie.files.wordpress.com/2020/04/2020.04.15-journal-manuscript-final.pdf

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Other Papers of Interest:

Date: September 24, 2020

Author: Gasperetti A, et al

Title: Arrhythmic safety of hydroxychloroquine in COVID-19 patients from different clinical settings

Journal: EP Europace

Findings: HCQ administration is safe for a short-term treatment for patients with COVID-19 infection regardless of the clinical setting of delivery, causing only modest QTc prolongation and no directly attributable arrhythmic deaths.

https://academic.oup.com/europace/advance-article/doi/10.1093/europace/euaa216/5910968#.X211x44dFYU.twitter

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Date: August 20, 2020

Author: Prodromos C

Title: Hydroxychloroquine is protective to the heart, not Harmful: A systematic review

Journal: New Microbes and New Infections

Findings: No Torsade de Pointes or related deaths were found to have been reported as a result of HCQ and azithromycin use in the peer reviewed literature. To the contrary HCQ/azithromycin were uniformly found to substantially reduce cardiac mortality and also to decrease thrombosis, arrhythmia and cholesterol in treated patients in recent peer reviewed studies and meeting presentations. HCQ and azithromycin do not cause TDP cardiac mortality. HCQ decreases cardiac events. HCQ should not be restricted in use for COVID 19 patients because of fear of cardiac mortality.

https://www.sciencedirect.com/science/article/pii/S2052297520300998

Date: August 20, 2020

Author: Kruger D

Journal: Journal of Translational Autoimmunity

Title: Azithromycin: The First Broad-spectrum Therapeutic

"We review azithromycin’s broad antibiotic, antimalarial, antiviral pharmacology ... and clinical and socio-economic propriety for respiratory pandemics; and delineate a model for its combinatorial mechanism of action against COVID-19 pneumonia."

https://www.sciencedirect.com/science/article/pii/S2589909020300290

Prophylaxis with Hydroxychloroquine for COVID-19

Date: May 23, 2021

Journal Name: Journal of Epidemiology and Global Health

https://www.atlantis-press.com/journals/jegh/125956914

Date: April 18, 2021

Author: Seong Seet RC

Journal: Int J Infect Dis

Title: Positive impact of oral hydroxychloroquine and povidone-iodine throat spray for COVID-19 prophylaxis: an open-label randomized trial

https://pubmed.ncbi.nlm.nih.gov/33864917/

Date: November 16, 2020

Author: Goenka M

Journal:J Assoc Physicians India

Title: Seroprevalence of COVID-19 Amongst Health Care Workers in a Tertiary Care Hospital of a Metropolitan City from India

Findings: HCW with a history of BCG vaccination in childhood and those who received an adequate prophylactic dose of hydroxychloroquine (HCQ) had a lower seroprevalence as compared to those who did not (7.31% vs. 16.8% and 1.30% vs. 11.25% respectively).

https://pubmed.ncbi.nlm.nih.gov/33187030/

Date: November 12, 2020

Author: Simova I et al

Journal: New Microbes and New Infections

Title: Hydroxychloroquine for prophylaxis and treatment of COVID-19 in health care workers

Since March 2020, many of our employees were in close contact with COVID-19 cases. We offered prophylaxis with HCQ 200 mg qd for 14 days to 204 of them. 76.4% of the group (156 HCW) used HCQ and neither of them presented with COVID-19 symptoms. Unfortunately, out of the rest 48 HCW that refused HCQ prophylaxis, three developed symptoms and tested positive for COVID-19. All HCW (191) treated with HCQ, took Zn as well. During the last seven months, 38 HCW at BCI tested positive for COVID-19, half of them symptomatic. We suggested the following treatment regimen as an early home-based therapy for them: azithromycin 500 mg qd; HCQ 200 mg tid and Zn up to 50 mg qd for 14 days. 33 (86.8%) of them undertook this treatment, with symptoms abolishing between 2nd and 4th day, none of them requiring hospitalization and with a negative PCR on 14th day for all. The rest five HCW (13.2%) employed alternative treatment regimens, none of them including HCQ. Three of them still tested positive at14th day and two of them required hospitalization.

https://www.sciencedirect.com/science/article/pii/S2052297520301657

Date: November 11, 2020

Author: Mathai, SS, et al

Journal: Journal of the Marine Medical Society

Title: Hydroxychloroquine as pre-exposure prophylaxis against COVID-19 in health-care workers: A single-center experience

Findings: HCWs including doctors, nursing staff, paramedical staff, and supporting staff who were advised HCQ as preexposure prophylaxis as per ICMR guidelines (at dose of 800 mg on day 1 and 400 mg weekly thereafter) were included in the study. There were 10 COVID-19 cases (2.1%) among HCWs taking HCQ while 22 (19.4%) cases occurred in HCQ not compliant HCWs, with a relative risk of 0.1046 (95% confidence interval: 0.0510–0.2147, P< 0.0001), indicating a reduced risk of COVID-19 among HCWs taking HCQ prophylaxis. Among the noncompliant cases, 14 (43.7%) never took HCQ, 4 (12.5%) took HCQ but had poor compliance, and 4 (12.5%) stopped HCQ prematurely. Most (91.7%) COVID-19-positive HCWs were asymptomatic or had mild symptoms, moderate symptoms were seen in 3 (9.3%), and there were no severe cases or deaths. Conclusions: The use of HCQ as preexposure prophylaxis in HCWs was associated with reduced risk of COVID-19, suggesting its role as an effective chemoprophylactic agent.

https://www.marinemedicalsociety.in/preprintarticle.asp?id=300159

Date: November 6, 2020

Author: Dhibar DP

Journal: International Journal of Antimicrobial Agents

Title: Post Exposure Prophylaxis with Hydroxychloroquine (HCQ) for the Prevention of COVID-19, a Myth or a Reality? The PEP-CQ Study

Findings: Total 50 out of 317 participants (15.8%) had new onset COVID-19. The incidence of COVID-19 was significantly (p=0.033) lower in PEP group [N=14 out of 132, (10.6%)] as compared to the control group [N=36 out of 185, (19.4%)]. Total absolute risk reduction for the incidence of COVID-19 was -8.8% points. The number needed to treat (NNT) to prevent occurrence of one case of COVID-19 was 12. The overall relative risk was 0.59 (95%

confidence interval, 0.33 to 1.05). The compliance was good and most common ADR was epigastric discomfort with burning sensation, reported by 3 participants and no serious ADR was noted. The PEP group received tablet HCQ 800 mg on day one followed by 400 mg once weekly for 3 weeks.

https://www.sciencedirect.com/science/article/pii/S0924857920304350

Date: October 20, 2020

Author: Goenka M

Title: Seroprevalence of COVID-19 Amongst Health Care Workers in a Tertiary Care Hospital of a Metropolitan City from India

The positivity rate was significantly lower with adequate (>6 weeks) hydroxychloroquine (HCQ) prophylaxis (1.30%,) in comparison to inadequate or no prophylaxis (11.25% and 12.99% respectively, p = 0.009).

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3689618

Date: October 20, 2020

Author: Tilangi P

"We believe that the hydroxychloroquine prophylaxis in selected groups of high-risk contacts is a prudent approach considering the risk–benefit analysis."

https://www.thelancet.com/pdfs/journals/laninf/PIIS1473-3099(20)30430-8.pdf

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Date: September 30, 2020

Author: Hernan M

Title: Brief communication: A meta-analysis of randomized trials of hydroxychloroquine for the prevention of COVID-19

Findings: The available evidence indicates that HCQ reduces the risk of COVID-19 by about 20%. Yet the findings from the randomized trials were widely interpreted as evidence of lack of effectiveness of HCQ, simply because they were not statistically significant when taking them individually. Completion of the ongoing prophylaxis trials is needed to generate more precise estimates of the effectiveness of HCQ to prevent COVID-19.

https://www.medrxiv.org/content/10.1101/2020.09.29.20203869v1

Date: July 9, 2020

Author: Ferreira A, et al.

Journal: Journal of Medical Virology

Title: Chronic treatment with hydroxychloroquine and SARS-CoV-2 infection.

Findings: "We were able to show that patients taking HCQ have had reduced odds of SARS-CoV-2 infection. ... Our data suggest that chronic treatment with HCQ confer protection against SARS-CoV-2 infection.

Preprint at: https://www.medrxiv.org/content/10.1101/2020.06.26.20056507v1.full.pdf
Published at: https://pubmed.ncbi.nlm.nih.gov/32644224/, https://onlinelibrary.wiley.com/doi/abs/10.1002/jmv.26286

Date: June 12, 2020

Author: Bhattacharya R, et al.

Title: “Pre exposure Hydroxychloroquine use is associated with reduced COVID19 risk in healthcare workers”

Findings: This study demonstrated that voluntary HCQ consumption as pre-exposure prophylaxis by HCWs is associated with a statistically significant reduction in risk of SARSCoV-2. The current study also validated the known safety profile for HCQ with no serious adverse events reported by the participants.

https://www.medrxiv.org/content/10.1101/2020.06.09.20116806v1.full.pdf

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Date: May 28, 2020

Author: Chatterjee P, et al.

Journal: Indian Journal of Medical Research

Title: “Healthcare workers & SARS-CoV-2 infection in India: A case-control investigation in the time of COVID-19”

Findings: Consumption of four or more maintenance doses was associated with a significant decline in the risk of SARS-CoV-2 infection among the study participants. Of the 172 cases and 193 controls reporting HCQ intake, no significant difference in the occurrence of adverse drug reactions was noted. Worth noting in this context was that the National Task Force for COVID-19 in India recommended once a week maintenance dose for seven weeks (400 mg once weekly), following the loading dose (400 mg bd).

http://www.ijmr.org.in/preprintarticle.asp?id=285520;type=2

Date: April 17, 2020

Author: Hee Lee S, et al.

Journal: International Journal of Antimicrobial Agents

Title: Can post-exposure prophylaxis for COVID-19 be considered as an outbreak response strategy in long-term care hospitals?

Findings: After a large COVID-19 exposure event in an LTCH in Korea, PEP using hydroxychloroquine (HCQ) was administered to 211 individuals, including 189 patients and 22 careworkers, whose baseline polymerase chain reaction (PCR) tests for COVID-19 were negative. PEP was completed in 184 (97.4%) patients and 21 (95.5%) careworkers without serious adverse events. At the end of 14 days of quarantine, all follow-up PCR tests were negative.

https://www.sciencedirect.com/science/article/pii/S092485792030145X?via%3Dihub

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Vitamin D:

July 26, 2021

Author: Szarpak L et al

Title: A systematic review and meta-analysis of effect of vitamin D levels on the incidence of COVID-19

Journal: Cardiology

Findings: "Low serum vitamin D levels are statistically significantly associated with the risk of COVID-19 infection. Supplementation of vitamin D especially in the deficiency risk groups is indicated."

https://journals.viamedica.pl/cardiology_journal/article/view/83912

Date: January 22, 2021

Author: Nogués X, et al

Title: Calcifediol Treatment and COVID-19-Related Outcomes

Findings: Out of 551 patients treated with calcifediol at admission, 30 (5.4%) required ICU, compared to 80 out of 379 controls (21.1%; p<0.0001). Logistic regression of calcifediol treatment on ICU admission, adjusted by age, gender, linearized 25(OH)D levels at baseline, and comorbidities showed that treated patients had a reduced risk to require ICU (RR 0.18 [95% CI 0.11;0.29]). Baseline 25(OH)D levels inversely correlated with the risk of ICU admission (RR 0.53 [95% CI 0.35;0.80]). Overall mortality was 10%. In the Intention-to-treat analysis, 36 (6.5%) out of 551 patients treated with calcifediol at admission died compared to 57 patients (15%) out of 379 controls (p=0.001). Adjusted results showed a reduced mortality for more of 60%. Higher baseline 25(OH)D levels were significantly associated with decreased mortality (RR 0.40 [95% CI 0.24;0.67]). Age and obesity were also predictors of mortality.

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3771318

Date: January 5, 2021

Author: Nikniaz L

Title: The impact of vitamin D supplementation on mortality rate and clinical outcomes of COVID-19 patients: A systematic review and meta-analysis

Findings: The pooled analysis of these studies showed a significantly lower mortality rate among the intervention groups (10.56%) compared with the control groups (23.88%) (OR = 0.264, 95% CI = 0.099–0.708, p-value = 0.008). Two of the studies reported the clinical outcomes based on the World Health Organization's Ordinal Scale for Clinical Improvement (OSCI) score for COVID-19, where both of them showed a significant decrease in OSCI score in the vitamin D intervention groups. Additionally, One study reported a lower rate of intensive care unit (ICU) admission, and one study reported a significant decrease in serum levels of Fibrinogen.

https://www.medrxiv.org/content/10.1101/2021.01.04.21249219v1

November 27, 2020
Author: De Smet D, et al

Journal: American Journal of Clinical Pathology

Title: Serum 25(OH)D Level on Hospital Admission Associated With COVID-19 Stage and Mortality

Findings: Of the patients with COVID-19, 59% were vitamin D deficient on admission: 47% of females and 67% of males. In particular, male patients with COVID-19 showed progressively lower 25(OH)D with advancing radiologic stage, with deficiency rates increasing from 55% in stage 1 to 74% in stage 3. Vitamin D deficiency on admission was not confounded by age, ethnicity, chronic lung disease, coronary artery disease/hypertension, or diabetes and was associated with mortality (odds ratio [OR], 3.87; 95% confidence interval [CI], 1.30-11.55), independent of age (OR, 1.09; 95% CI, 1.03-1.14), chronic lung disease (OR, 3.61; 95% CI, 1.18-11.09), and extent of lung damage expressed by chest CT severity score (OR, 1.12; 95% CI, 1.01-1.25). Conclusions: Low 25(OH)D levels on admission are associated with COVID-19 disease stage and mortality.

https://academic.oup.com/ajcp/advance-article/doi/10.1093/ajcp/aqaa252/6000689

November 12, 2020

Author: Rastogi B

Journal: BMJ

Title: Short term, high-dose vitamin D supplementation for COVID-19 disease: a randomised, placebo-controlled, study (SHADE study)

Findings: Intervention Participants were randomised to receive daily 60 000 IU of cholecalciferol (oral nano-liquid droplets) for 7 days with therapeutic target 25(OH)D>50 ng/ml (intervention group) or placebo (control group). Patients requiring invasive ventilation or with significant comorbidities were excluded. 25(OH)D levels were assessed at day 7, and cholecalciferol supplementation was continued for those with 25(OH)D <50 ng/ml in the intervention arm. SARS-CoV-2 RNA and inflammatory markers fibrinogen, D-dimer, procalcitonin and (CRP), ferritin were measured periodically. Outcome measure Proportion of patients with SARS-CoV-2 RNA negative before day-21 and change in inflammatory markers. Results Forty SARS-CoV-2 RNA positive individuals were randomised to intervention (n=16) or control (n=24) group. Baseline serum 25(OH)D was 8.6 (7.1 to 13.1) and 9.54 (8.1 to 12.5) ng/ml (p=0.730), in the intervention and control group, respectively. 10 out of 16 patients could achieve 25(OH)D>50 ng/ml by day-7 and another two by day-14 [day-14 25(OH)D levels 51.7 (48.9 to 59.5) ng/ml and 15.2 (12.7 to 19.5) ng/ml (p<0.001) in intervention and control group, respectively]. 10 (62.5%) participants in the intervention group and 5 (20.8%) participants in the control arm (p<0.018) became SARS-CoV-2 RNA negative. Fibrinogen levels significantly decreased with cholecalciferol supplementation (intergroup difference 0.70 ng/ml; P=0.007) unlike other inflammatory biomarkers. Conclusion Greater proportion of vitamin D-deficient individuals with SARS-CoV-2 infection turned SARS-CoV-2 RNA negative with a significant decrease in fibrinogen on high-dose cholecalciferol supplementation.

https://pmj.bmj.com/content/early/2020/11/12/postgradmedj-2020-139065.info

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Date: October 27, 2020

Author: Hernandez J

Journal: The Journal of Clinical Endocrinology & Metabolism

Title: Vitamin D Status in Hospitalized Patients With SARS-CoV-2 Infection

Findings: 25OHD levels are lower in hospitalized COVID-19 patients compared to population-based controls and these patients had a higher prevalence of deficiency. Patients on supplements had a significantly lower PaO2/FIO2 ratio<300 prevalence, lower serum ferritin levels, and received less frequently tocilizumab than COVID-19 patients who did not take

vitamin D supplements. They also had an overall lower percentage of the combined severity endpoint and ICU admissions, as well as a shorter length of hospital stay, although these data did not reach statistical significance.

https://academic.oup.com/jcem/advance-article/doi/10.1210/clinem/dgaa733/5934827

Date: October 13, 2020

Author: Annweiler, C

Journal: The Journal of Steroid Biochemistry and Molecular Biology

Title: Vitamin D and survival in COVID-19 patients: A quasi-experimental study

Findings: 82.5% of participants in the Intervention group survived COVID-19, compared to only 44.4% in the Comparator group (P = 0.023). The full-adjusted hazard ratio for mortality according to vitamin D3 supplementation was HR = 0.11[95%CI:0.03;0.48],P = 0.003. Kaplan-Meier distributions showed that Intervention group had longer survival time than Comparator group (log-rank P = 0.002). Finally, vitamin D3 supplementation was inversely associated with OSCI score for COVID-19 (β=-3.84[95%CI:-6.07;-1.62], P = 0.001). In conclusion, bolus vitamin D3 supplementation during or just before COVID-19 was associated in frail elderly with less severe COVID-19 and better survival rate.

https://www.sciencedirect.com/science/article/abs/pii/S096007602030296X

Date: October 6, 2020

Author: Faniyi, AA et al

Title: Vitamin D status and seroconversion for COVID-19 in UK healthcare workers who isolated for COVID-19 like symptoms during the 2020 pandemic.

Findings: Within the whole cohort there was an increase in seroconversion in staff with vitamin D deficiency compared to those without vitamin D deficiency (n=44/61, 72% vs n=170/331, 51%; p=0· 003); this was particularly marked in the proportion of BAME males who were vitamin D deficient compared to non-vitamin D deficient BAME males (n=17/18, 94% vs n=12/23, 52%; p=0·005). Multivariate analysis revealed that vitamin D deficiency was an independent risk factor for seroconversion (OR 2·6, 95%CI 1·41− 4· 80; p=0·002). Interpretation: In those

healthcare workers who have isolated due to symptoms of COVID-19, those of BAME ethnicity are at the highest risk of vitamin D deficiency. Vitamin D deficiency is a risk factor for COVID-19 seroconversion for NHS healthcare workers especially in BAME male staff.

https://www.medrxiv.org/content/10.1101/2020.10.05.20206706v1

Date: September 3, 2020

Author: Meltzer D et al

Journal: JAMA

Title: Association of Vitamin D Status and Other Clinical Characteristics With COVID-19 Test Results

Findings: In this cohort study of 489 patients who had a vitamin D level measured in the year before COVID-19 testing, the relative risk of testing positive for COVID-19 was 1.77 times greater for patients with likely deficient vitamin D status compared with patients with likely sufficient vitamin D status, a difference that was statistically significant.

https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2770157

Date: August 29, 2020

Author: Castillo M, et al.

Journal: The Journal of Steroid Biochemistry and Molecular Biology

Title: Effect of Calcifediol Treatment and best Available Therapy versus best Available Therapy on Intensive Care Unit Admission and Mortality Among Patients Hospitalized for COVID-19: A Pilot Randomized Clinical study

Findings: Our pilot study demonstrated that administration of a high dose of Calcifediol or 25-hydroxyvitamin D, a main metabolite of vitamin D endocrine system, significantly reduced the need for ICU treatment of patients requiring hospitalization due to proven COVID-19. Calcifediol seems to be able to reduce severity of the disease, but larger trials with groups properly matched will be required to show a definitive answer. [this looks like about 20,000 IU on admission and then 10,000 IU on later days and then weekly]

https://www.sciencedirect.com/science/article/pii/S0960076020302764

Zinc:

Date: February 13, 2021

Author: Raoult D, et al

Journal: Journal of Microbiology, Immunology and Infection

Title: Low blood zinc concentrations in patients with poor clinical outcome during SARS-CoV-2 infection: is there a need to supplement with Zinc COVID-19 patients?

Findings: Among 275 patients with COVID-19, we found that median blood zinc level was significantly lower in patients with poor clinical outcome (N=75) as compared to patients with good clinical outcome (N=200) (840 µg/L versus 970 µg/L; p< 0.0001), suggesting that zinc supplementation could be useful for patients with severe COVID-19.

https://www.sciencedirect.com/science/article/pii/S1684118221000268

Date: October 26, 2020

Among 3,473 patients (median age 64, 1947 [56%] male, 522 [15%] ventilated, 545[16%] died), 1,006 (29%) received Zn+ionophore. Zn+ionophore was associated with a 24% reduced risk of in-hospital mortality (12% of those who received Zn+ionophore died versus 17% who did not; adjusted Hazard Ratio [aHR] 0.76, 95% CI 0.60-0.96, P=0.023). More patients who received Zn+ionophore were discharged home (72% Zn+ionophore vs 67% no Zn+ionophore, P=0.003) Neither Zn nor the ionophore alone were associated with decreased mortality rates.

https://www.researchsquare.com/article/rs-94509/v1

Date: October 20, 2020

"Our data indicate a profound and acute zinc deficiency in the majority of patients with COVID-19 when admitted to the hospital. … We conclude that Zn and SELENOP status within the reference ranges indicate high survival odds in COVID-19, and assume that correcting a

diagnostically proven deficit in Se and/or Zn by a personalised supplementation may support convalescence."

https://www.sciencedirect.com/science/article/pii/S2213231720309691

Date: October 11, 2020

Author: Vogel M, et al

Title: Low zinc levels at clinical admission associates with poor outcomes in COVID-19

Findings: Individuals with SZC at admission <50 µg/dl had a mortality of 21% that was significantly higher compared with 5% mortality in individuals with zinc at admission ≥50 µg/dl; p<0·001. Our study demonstrates a correlation between serum zinc levels and COVID-19 outcome. Serum zinc levels lower than 50 mcgg/dl at admission correlated with worse clinical presentation, longer time to reach stability and higher mortality.

https://www.medrxiv.org/content/10.1101/2020.10.07.20208645v1

Date: September 17, 2020

Author: Brufsky A, et al

Journal: Journal of Medical Virology

Title: Potential interventions for SARS-CoV-2 infections: Zinc showing promise

Findings: Zinc (Zn) inhibits SARS-CoV-2 in vitro by several different mechanism. Zn deficiency may increase the risk for severity of COVID-19 infection. The addition of Zn, particularly with a Zn ionophore, shows substantial promise as a treatment regimen.

https://onlinelibrary.wiley.com/doi/full/10.1002/jmv.26523

Date: September 10, 2020

Author: Jothimani D, et al.

Journal: International Journal of Infectious Diseases

Title: COVID-19: Poor outcomes in patients with Zinc deficiency

https://www.sciencedirect.com/science/article/pii/S120197122030730X

Findings: More patients in the Zinc deficient group ... required ICU care (7 vs 2, P=0.266) and recorded deaths (5 (18.5%) vs 0 (0%), P=0.06) in comparison to patients with normal Zinc levels. Hydroxychloroquine, a drug used initially in the management of COVID-19, is an ionophore that transports Zinc across the hydrophobic cell membrane24,25. Moreover, evidences specifically suggest that Zinc supplemented with antiviral drugs containing Zinc-ionophores precisely targets and binds to SARS-CoV-2 preventing its replication within the infected host cells2"

September 7, 2020

Author: Yasui Y, et al.

Journal: International Journal of Infectious Diseases

Title: Analysis of the predictive factors for critical illness of COVID-19 during treatment - Relationship between serum zinc level and critical illness of COVID-19

Findings: Based on the measurement results of serum zinc levels in patients with COVID-19 in our hospital, almost all severe cases showed subclinical or clinical zinc deficiency. Prolonged hypozincemia was found to be a risk factor for a severe case of COVID-19. In evaluating the relationship between the serum zinc level and severity of patients with COVID-19 by multivariate logistic regression analysis, critical illness can be predicted through the sensitivity and false specificity of an ROC curve with an error rate of 10.3% and AUC of 94.2% by only two factors: serum zinc value (P = 0.020) and LDH value (P = 0.026). Serum zinc <70 μg/dL was defined as the criterion for hypozincemia, and patients continuously with serum zinc <70 μg/dL were classified in the hypozincemia cohort.

Link to paper: https://www.sciencedirect.com/science/article/pii/S1201971220307232

Ivermectin:

Date: June 15, 2021

Author:

Journal: Journal of Antibiotics

Title: The mechanisms of action of Ivermectin against SARS-CoV-2: An evidence-based clinical review article

Considering the urgency of the ongoing COVID-19 pandemic, simultaneous detection of various new mutant strains and future potential re-emergence of novel coronaviruses, repurposing of approved drugs such as Ivermectin could be worthy of attention.

https://www.nature.com/articles/s41429-021-00430-5

Date:

Date: December 2, 2020

Author: Ahmed S
Journal: International Journal of Infectious Diseases

Title: A five day course of ivermectin for the treatment of COVID-19 may reduce the duration of illness

Findings: To determine the rapidity of viral clearance and safety of ivermectin among adult SARS-CoV-2 patients we conducted a randomized, double-blind, placebo-controlled trial of oral ivermectin alone (12 mg once daily for 5 days) or in combination with doxycycline (12 mg ivermectin single dose and 200 mg stat doxycycline day-1 followed by 100 mg 12hrly for next 4 days) compared with placebo among 72 hospitalized patients in Dhaka, Bangladesh. Clinical symptoms of fever, cough and sore throat were comparable among the three treatment arms. Virological clearance was earlier in the 5-day ivermectin treatment arm versus the placebo group (9.7 days vs. 12.7 days; P = 0.02); but not with the ivermectin + doxycycline arm (11.5 days; P = 0.27). There were no severe adverse drug events recorded in the study. A 5-day course of ivermectin was found to be safe and effective in treating mild COVID-19 adult patients. Larger trials will be needed to confirm these preliminary findings.

https://www.sciencedirect.com/science/article/pii/S1201971220325066

Date: November 17, 2020

Author: Elgazzar A, et al

Title: Efficacy and Safety of Ivermectin for Treatment and prophylaxis of COVID-19 Pandemic

Findings: A substantial improvement and reduction in mortality rate in Ivermectin treated groups; group I (mild/moderate cases), (99%, and 0.0%, respectively) and group III (severe cases), (94%, and 2.0% respectively) versus hydroxychloroquine plus standard care treated groups; group II (mild/moderate cases), (74% and 4%, respectively) and group IV (severe cases) (50% and 20%, respectively). Ivermectin had significantly reduced the incidence of infection in health care and household contacts up to 2% compared to 10% in non ivermectin group when used as a prophylaxis. : Addition of Ivermectin to standard care is very effective drug for treatment of COVID-19 patients with significant reduction in mortality compared to Hydroxychloroquine plus standard treatment only. Early use of Ivermectin is very useful for controlling COVID 19 infections; prophylaxis and improving cytokines storm.

https://www.researchsquare.com/article/rs-100956/v2

Date: November 13, 2020

Authors: Kory & Marik et al

Title: Review of the Emerging Evidence Supporting the Use of Ivermectin in the Prophylaxis and Treatment of COVID-19

Findings: "In summary, based on the existing and cumulative body of evidence, we recommend the use of ivermectin in both prophylaxis and treatment for COVID-19. … If a physician believes, based on the current body of evidence ... that it is far more likely that ivermectin will help rather than harm, it would be unethical to either withhold treatment or to treat with a placebo."

Link: https://osf.io/wx3zn/

Date: November 3, 2020

Title: Role of ivermectin in the prevention of COVID-19 infection among healthcare workers in India: A matched case-control study

Findings: Two-dose ivermectin prophylaxis at a dose of 300 µg/kg with a gap of 72 hours was associated 73% reduction of COVID-19 infection among healthcare workers for the following one-month

https://www.medrxiv.org/content/10.1101/2020.10.29.20222661v1.full.pdf

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Date: October 27, 2020

Author: Hashim HA

Title: Controlled randomized clinical trial on using Ivermectin with Doxycycline for treating COVID-19 patients in Baghdad, Iraq

Findings: Ivermectin with doxycycline reduced the time to recovery and the percentage of patients who progress to more advanced stage of disease; in addition, Ivermectin with doxycycline reduced mortality rate in severe patients from 22.72% to 0%; however, 18.2% of critically ill patients died with Ivermectin and doxycycline therapy. Taken together, the earlier administered Ivermectin with doxycycline, the higher rate of successful therapy. https://www.medrxiv.org/content/10.1101/2020.10.26.20219345v1

Date: October 13, 2020

Author: Rajter JC

Journal: Chest

Title: Use of Ivermectin Is Associated With Lower Mortality in Hospitalized Patients With Coronavirus Disease 2019: The ICON Study

Findings: After multivariate adjustment for confounders and mortality risks, the mortality difference remained significant (OR 0.27, CI 0.09-0.80, p=0.03). 196 patients were included in the propensity-matched cohort. Mortality was significantly lower in the ivermectin group (13.3% vs 24.5%, OR 0.47, CI 0.22-0.99, p<0.05); an 11.2% (CI 0.38%-22.1%) absolute risk reduction, with a number needed to treat of 8.9 (CI 4.5-263). Ivermectin treatment was associated with lower mortality during treatment of COVID-19, especially in patients with severe pulmonary involvement. Randomized controlled trials are needed to confirm these findings.

https://www.sciencedirect.com/science/article/pii/S0012369220348984

Nitazoxanide:

Date: October 23, 2020

Author: Rocco P

Title: Early use of nitazoxanide in mild Covid-19 disease: randomized, placebo-controlled trial

Findings: Viral load was reduced in the nitazoxanide group vs. the placebo group. But complete resolution of symptoms (dry cough, fever, and fatigue) did not differ between the nitazoxanide and placebo arms after 5 days of therapy. However, "at the 1-week followup, 78% in the nitazoxanide arm and 57% in the placebo arm reported complete resolution of symptoms (p=0.048)." Ten patients (5 from each arm) were hospitalized due to clinical deterioration; none had completed the 5-day course of therapy. Two patients, both in the nitazoxanide arm, required intensive care unit admission.

"https://www.medrxiv.org/content/10.1101/2020.10.21.20217208v1.supplementary-material

IVERMECTIN FOR COVID-19

63 TRIALS, 613 SCIENTISTS, 26,398 PATIENTS

31 RANDOMIZED CONTROLLED TRIALS

86% IMPROVEMENT IN 14 PROPHYLAXIS TRIALS RR 0.14 [0.08-0.25]

73% IMPROVEMENT IN 27 EARLY TREATMENT TRIALS RR 0.27 [0.16-0.44]

40% IMPROVEMENT IN 22 LATE TREATMENT TRIALS RR 0.60 [0.48-0.76]

61% IMPROVEMENT IN 25 MORTALITY RESULTS RR 0.39 [0.28-0.56]

60% IMPROVEMENT IN 31 RANDOMIZED CONTROLLED TRIALS RR 0.40 [0.28-0.57]

SUMMARY OF RESULTS REPORTED IN IVERMECTIN TRIALS FOR COVID-19. 08/17/21. IVMMETA.COM

Database of all ivermectin COVID-19 studies. 110 studies, 68 peer reviewed, 63 with results comparing treatment and control groups. FLCCC provides treatment recommendations. Ivermectin related news can be found on Telegram channels BiRD and FLCCC. Submit updates/corrections.

Search: Restrict: **All** Early Late Prophylaxis

Aug 12	Early,...	*Covid Analysis* (Preprint) (me...	meta-analysis v110	Ivermectin for COVID-19: real-time meta analysis of 63 studies
	Details	• Meta analysis using the most serious outcome reported shows 73% [56-84%] and 86% [75-92%] improvement for early treatment and prophylaxis, wit...		
Aug 12	Late	*Elavarasi et al., medRxiv, doi:...*	death, ↓19.6%, p=0.12	Clinical features, demography and predictors of outcomes of SARS-CoV-2 infec...
	Details	Retrospective 2017 hospitalized patients in India, showing lower mortality with ivermectin treatment in unadjusted results. No group details are provide...		
Aug 10	News	*La Pampa, Argentina (News)*	death, ↓27.4%	La Pampa expondrá a la comunidad científica los resultados del Programa de ...
	Details	News report on the use of ivermectin in La Pampa, Argentina, showing lower mortality with treatment.		
Aug 6	Revie...	*Kow et al., American Journal ...*	review	Pitfalls in Reporting Sample Size Calculation Across Randomized Controlled Tr...
	Details	Review of sample size calculations in ivermectin RCTs, showing that existing RCTs are very underpowered.		
Aug 6	Early	*Together Trial (News)*	death, ↓18.0%, p=0.54	Early Treatment of COVID-19 with Repurposed Therapies: The TOGETHER Ada...
	Details	Preliminary report from the Together Trial showing mortality RR 0.82 [0.44-1.52]. Treatment delay is currently unknown, however the protocol allows ver...		
Aug 5	In Sili...	*Rana et al., Research Square, doi:10.21203/rs.3.rs-755838/v1 (Prep...*		A Computational Study of Ivermectin and Doxycycline Combination Drug Agai...
	Details	*In silico* study showing strong binding affinity of ivermectin and doxycycline for SARS-CoV-2 main protease 3CLpro, and increased binding affinity for th...		
Aug 3	Revie...	*Santin et al., New Microbes a...*	review	Ivermectin: a multifaceted drug of Nobel prize-honored distinction with indicat...
	Details	Review concluding that the evidence supports worldwide use of ivermectin for COVID-19, complementary to immunization. Authors note that it is likely ...		
Jul 28	Meta	*Popp et al., Cochrane Databa...*	meta-analysis	Ivermectin for preventing and treating COVID-19
	Details	Outdated very biased retrospective meta analysis cherry-picking a small subset of studies, with a majority of results based on only 1 or 2 studies, showi...		
Jul 25	Early	*Ontai et al., medRxiv, doi:10.1101/2021.07.21.21260223 (Preprint)*		Early multidrug treatment of SARS-CoV-2 (COVID-19) and decreased case fatal...
	Details	Report on the nationwide implementation of multi-drug COVID-19 inpatient and outpatient treatment protocols in Honduras, showing a case fatality rat...		
Jul 24	News	*World Ivermectin Day (News)*	news	World Ivermectin Day
	Details	Joint event by 22 worldwide organizations.		
Jul 23	Safety	*Mansour et al., International J...*	safety analysis	Safety of inhaled ivermectin as a repurposed direct drug for treatment of COVI...
	Details	Safety analysis of an inhaled lyophilized ivermectin formulation, showing 127-fold increase in drug solubility, and identifying safe dosage levels in rats.		
Jul 16	News	*FLCCC Alliance and British Iv...*	news	Joint Statement of the FLCCC Alliance and British Ivermectin Recommendation...
	Details	News release noting that ivermectin remains effective after excluding Elgazzar et al. Given the large magnitude effects and 61 studies, excluding one st...		
Jul 12	Meta	*Neil et al., ResearchGate, doi:...*	meta-analysis	Bayesian Meta Analysis of Ivermectin Effectiveness in Treating Covid-19 Disea...
	Details	Bayesian analysis of a subset of ivermectin trial data concluding that there is overwhelming evidence to support a causal link between ivermectin, COVI...		
Jul 8	In Sili...	*Muthusamy et al., Journal of Virology & Antiviral Research (Peer Re...*		Virtual Screening Reveals Potential Anti-Parasitic Drugs Inhibiting the Receptor...
	Details	*In Silico* study identifying 32 anti-parisitic compounds effectively inhibiting the RBD of the SARS-CoV-2 spike protein, with ivermectin being one of the to...		
Jul 8	News	*Together Trial (News)*	news	Together Trial removes mortality and adverse event outcomes, and sublingual ...
	Details	Together Trial removes mortality and adverse event outcomes, and sublingual administration mid-trial.		
Jul 7	Late	*Hazan et al., medRxiv, doi:10...*	death, ↓85.9%, p=0.04	Effectiveness of Ivermectin-Based Multidrug Therapy in Severe Hypoxic Ambul...
	Details	Small study of 24 consecutive patients in serious condition (9 days post symptoms, mean SpO_2 87.4) using combined treatment with ivermectin, doxyc...		

Jul 3	News	*Open Letter*, Statement of Co…	news	Open Letter, Statement of Concern and Request for Retraction
	Details	Open letter signed by 40 physicians detailing errors and flaws in the Roman et al. meta analysis, and requesting retraction.		
Jul 2	Revie…	*Adegboro et al., African Jour…*	review	A review of the anti-viral effects of ivermectin
	Details	Review of the antiviral effects of ivermectin.		
Jul 2	Early	*Vallejos et al., BMC Infectiou…*	death, ↑33.5%, p=0.70	Ivermectin to prevent hospitalizations in patients with COVID-19 (IVERCOR-CO…
	Details	RCT with 501 relatively low-risk outpatients in Argentina showing hospitalization OR 0.65 [0.32-1.31]. With only 7% hospitalization, the trial is underpo…		
Jun 30	Revie…	*Turkia, M., ResearchGate, doi:…*	review	A Continuation of a Timeline of Ivermectin-Related Events in the COVID-19 Pan…
	Details	An extension of the ivermectin timeline covering April - June 2021, including WHO's role and funding, Gavi, COVAX, Trusted News Initiative, International…		
Jun 28	N/A	*Roman et al., Clinical Infectio…*	meta-analysis	Ivermectin for the treatment of COVID-19: A systematic review and meta-analy…
	Details	Severely flawed meta analysis. An open letter signed by 40 physicians detailing errors and flaws, and requesting retraction, can be found at [1]. See also…		
Jun 25	Revie…	*Jagiasi et al., The Internation…*	review	Variation in therapeutic strategies for the management of severe COVID-19 in I…
	Details	Survey of medication use for severe COVID-19 in India, showing 33% adoption of ivermectin as of January 2021.		
Jun 22	News	*Misiones Ministry of Public …*	news	Results from ivermectin use from the Misiones Ministry of Public Health
	Details	News report on ivermectin use in Misiones, Argentina, showing significantly lower hospitalization and mortality, and a dose-dependent effect with impr…		
Jun 18	Revie…	*Lind et al., Journal of General…*	review	Increase in Outpatient Ivermectin Dispensing in the US During the COVID-19 Pa…
	Details	CDC analysis of ivermectin prescriptions in the US suggesting that, while national health authority recognition is delayed in that country, many physicia…		
Jun 18	Early	*Krolewiecki et al., EClinicalM…*	ventilation, ↑151.9%, p=1.00	Antiviral effect of high-dose ivermectin in adults with COVID-19: A proof-of-con…
	Details	Proof of concept RCT with 30 ivermectin patients and 15 control patients, showing a concentration dependent antiviral activity, but no significant differ…		
Jun 17	Meta	*Bryant et al., American Journ…*	death, ↓62.0%, p=0.005	Ivermectin for Prevention and Treatment of COVID-19 Infection: A Systematic R…
	Details	Systematic review, meta analysis, and trial sequential analysis of 24 RCTs finding mortality RR 0.38 [0.19-0.73].		
Jun 15	Revie…	*Zaidi et al., The Journal of An…*	review	The mechanisms of action of Ivermectin against SARS-CoV-2: An evidence-ba…
	Details	Extensive review of 20 mechanisms of action of ivermectin for SARS-CoV-2.		
Jun 15	Early	*Aref et al., International Jour…*	recov. time, ↓63.2%, p=0.0001	Clinical, Biochemical and Molecular Evaluations of Ivermectin Mucoadhesive …
	Details	RCT 114 patients in Egypt, 57 treated with ivermectin mucoadhesive nanosuspension intranasal spray, showing faster recovery and viral clearance wit…		
Jun 6	N/A	*Hariyanto et al., Reviews In …*	death, ↓69.0%, p=0.001	Ivermectin and outcomes from Covid-19 pneumonia: A systematic review and …
	Details	Systematic review and meta analysis of 19 RCTs showing mortality RR 0.31 [0.15-0.62].		
Jun 3	Revie…	*Wang et al., medRxiv, doi:10.…*	review	Minimum manufacturing costs, national prices and estimated global availabili…
	Details	Analysis of the manufacturing cost of several COVID-19 medications, showing a cost of $0.55 per course of ivermectin, including excipients, formulatio…		
Jun 2	Late	*Abd-Elsalam et al., Journal o…*	death, ↓25.0%, p=0.70	Clinical Study Evaluating the Efficacy of Ivermectin in COVID-19 Treatment: A R…
	Details	RCT 164 hospitalized patients in Egypt showing lower mortality and shorter hospitalization, but without statistical significance. There were no serious …		
May 31	PrEP…	*Mondal et al., Journal of the I…*	symp. case, ↓87.9%, p=0.006	Prevalence of COVID-19 Infection and Identification of Risk Factors among Asy…
	Details	Retrospective 1,470 healthcare workers in India, showing significantly lower risk of symptomatic COVID-19 with ivermectin prophylaxis.		
May 18	In Vit…	*Mountain Valley MD (Preprin…*	*in vitro*	Mountain Valley MD Receives Successful Results From BSL-4 COVID-19 Cleara…
	Details	*In Vitro* and mouse study with human ACE2 cells, using solubilized ivermectin with Ivectosol™, showing antiviral effect with B.1.1.7, B.1.351, and P.1 var…		
May 12	News	*FLCCC Public Statement (Ne…*	news	FLCCC Alliance Statement on the Irregular Actions of Public Health Agencies a…
	Details	Analysis of the ivermectin recommendations from WHO and others, and a call to action for all citizens, scientists, and media to counter false informatio…		
May 10	Early	*Faisal et al., The Professiona…*	no recov., ↓68.4%, p=0.005	Potential use of azithromycin alone and in combination with ivermectin in figh…
	Details	RCT 100 outpatients in Pakistan, 50 treated with ivermectin, showing faster recovery with ivermectin. All patients received AZ, zinc, vitamin C, vitamin D,…		
May 5	In Vit…	*Zatloukal et al. (News) (In Vit…*	news	News report on In Vitro results from the research institute of Prof. Zatloukal
	Details	News report on *In Vitro* results from the research institute of Prof. Zatloukal, showing that "ivermectin was able to reduce virus replication by a factor of …		
May 5	In Sili…	*Qureshi et al., Journal of Biomolecular Structure and Dynamics, doi:…*		Mechanistic insights into the inhibitory activity of FDA approved ivermectin ag…
	Details	*In Silico* study showing inhibition of importin-α1 by ivermectin, which disrupts SARS-CoV-2 replication.		
May 4	Meta	*Karale et al., medRxiv, doi:10.…*	meta-analysis	A Meta-analysis of Mortality, Need for ICU admission, Use of Mechanical Venti…
	Details	Systematic review and meta analysis with 30 studies included in quantitative analysis, showing mortality OR 0.39 [0.22-0.70]. Subgroup analysis of tria…		
May 3	Early	*Merino et al., SocArXiv Paper…*	hosp., ↓74.4%, p<0.001	Ivermectin and the odds of hospitalization due to COVID-19: evidence from a q…
	Details	Analysis of Mexico City's use of an ivermectin-based medical kit, showing significantly lower hospitalization with use. Authors use logistic-regression …		
Apr 30	Revie…	*Kory et al., American Journal …*	review	Review of the Emerging Evidence Demonstrating the Efficacy of Ivermectin in t…
	Details	Review of ivermectin trials and epidemiological data, concluding that ivermectin is effective for prophylaxis and treatment, and should be globally and …		

Apr 29	Late	*Ahsan et al., Cureus, doi:10.7…*	death, ↓50.0%, p=0.03	Clinical Variants, Characteristics, and Outcomes Among COVID-19 Patients: A …
	Details	Retrospective 165 hospitalized patients in Pakistan showing unadjusted lower mortality with combined ivermectin and doxycycline treatment. Details o…		
Apr 19	Revie…	*DiNicolantonio et al., Open H…*	review	Anti-inflammatory activity of ivermectin in late-stage COVID-19 may reflect act…
	Details	Review suggesting that the effectiveness of ivermectin in the cytokine storm phase of COVID-19 may be, at least in part, an anti-inflammatory effect me…		
Apr 17	Early	*Loue et al., J. Infectious Dise…*	death, ↓70.0%, p=0.34	Ivermectin and COVID-19 in Care Home: Case Report
	Details	Small quasi-randomized (patient choice) study with 25 PCR+ patients in a nursing home offered ivermectin, of which 10 chose to be treated. The mean …		
Apr 16	PrEP…	*Morgenstern et al., medRxiv, …*	hosp., ↓80.0%, p=0.50	Retrospective cohort study of Ivermectin as a SARS-CoV-2 pre-exposure proph…
	Details	Propensity matched retrospective prophylaxis study of healthcare workers in the Dominican Republic showing significantly lower cases with treatment, …		
Apr 14	PrEP…	*Seet et al., International Jour…*	severe case, ↓49.8%, p=0.01	Positive impact of oral hydroxychloroquine and povidone-iodine throat spray f…
	Details	Prophylaxis RCT in Singapore with 3,037 low risk patients, showing lower serious cases, lower symptomatic cases, and lower confirmed cases of COVI…		
Apr 10	In Sili…	*Bello et al., Journal of Biomolecular Structure and Dynamics, doi:10.…*		Elucidation of the inhibitory activity of ivermectin with host nuclear importin α …
	Details	*In Silico* analysis finding that the *in vitro* activity of ivermectin may explained by acting as an inhibitor of importin-α, dimeric 3CLpro, and Nsp9.		
Apr 3	Revie…	*Turkia, M., Research Gate (Re…*	review	A timeline of ivermectin-related events in the COVID-19 pandemic
	Details	An extensive timeline of ivermectin-related events from April 2020 to March 2021 including studies, news, health authority decisions, biased news cover…		
Apr 1	Early	*Mourya et al., Int. J. Health a…*	viral+, ↓89.4%, p<0.0001	Comparative Analytical Study of Two Different Drug Regimens in Treatment of …
	Details	Retrospective 100 patients in India with 50 treated with ivermectin, and SOC for all patients including HCQ+AZ, showing much higher viral clearance wit…		
Mar 30	Revie…	*Wehbe et al., Front. Immunol…*	review	Repurposing Ivermectin for COVID-19: Molecular Aspects and Therapeutic Pos…
	Details	Review of how ivermectin was identified for use in COVID-19, mechanisms of action, and selected clinical trials.		
Mar 30	Early	*Chahla et al., Research Squar…*	no disch., ↓86.9%, p=0.004	Cluster Randomised Trials - Ivermectin Repurposing For COVID-19 Treatment …
	Details	Cluster RCT outpatients in Argentina showing signficantly faster recovery with ivermectin. There were no deaths. Cluster RCT where outpatients in Tucu…		
Mar 29	Meta	*Kow et al., Pharmacological …*	meta-analysis	The association between the use of ivermectin and mortality in patients with C…
	Details	Small meta analysis of 6 RCTs showing mortality OR 0.21 [0.11-0.42]. Authors do not include two more recent RCTs with mortality results, 10 other stu…		
Mar 26	PrEP…	*Tanioka et al., medRxiv, doi:1…*	death, ↓88.2%, p=0.002	Why COVID-19 is not so spread in Africa: How does Ivermectin affect it?
	Details	Retrospective study of the 31 onchocerciasis-endemic countries using the community-directed treatment with ivermectin (CDTI) and the 22 non-endemi…		
Mar 25	In Sili…	*Udofia et al., Network Modeling Analysis in Health Informatics and …*		In silico studies of selected multi-drug targeting against 3CLpro and nsp12 RN…
	Details	*In Silico* analysis finding that ivermectin had the highest binding energy against the 3CLpro of SARS-CoV-2 and RdRps of both SARS-CoV and SARS-Co…		
Mar 25	In Sili…	*Choudhury et al., Future Medicine, doi:10.2217/fvl-2020-0342 (Peer…*		Exploring the binding efficacy of ivermectin against the key proteins of SARS-C…
	Details	*In Silico* analysis finding that ivermectin has high binding affinity for the SARS-CoV-2 viral spike protein, main protease, replicase, and human TMPRSS…		
Mar 25	Late	*Huvemek Press Release (Pre…*	no improv., ↓31.6%, p=0.28	Kovid-19 - Huvemek® Phase 2 clinical trial
	Details	Phase 2 results from a multicenter RCT of hospitalized patients in Bulgaria showing faster viral clearance, greater clinical improvement, and improved …		
Mar 24	Revie…	*Yagisawa et al., The Japanes…*	review	Global trends in clinical studies of ivermectin in COVID-19
	Details	Review of ivermectin for COVID-19. Authors note that Kitasato University's project was expanded in response to the results of Caly et al. which had left …		
Mar 21	Early	*Emmerich et al., Int. J. Environ. Res. Public Health, doi:10.3390/ijer…*		Comparisons between the Neighboring States of Amazonas and Pará in Brazil …
	Details	Comparison between the two largest neighboring states in Brazil, Amazonas and Pará, showing more than 5 times lower mortality in Pará during the se…		
Mar 18	Late	*Del Franco et al., Journal of Biomedical Research and Clinical Invest…*		Ivermectin in Long-Covid Patients: A Retrospective Study
	Details	Retrospective 856 patients previously admitted to hospital for COVID-19 in Argentina, finding that ivermectin improved recovery from "long covid" symp…		
Mar 12	Early	*Roy et al., medRxiv, doi:10.11…*	recov. time, ↓5.6%, p=0.87	Outcome of Different Therapeutic Interventions in Mild COVID-19 Patients in a …
	Details	Retrospective database analysis of 56 mild COVID-19 patients, all treated with vitamin C, vitamin D, and zinc, comparing ivermectin + doxycycline (n=1…		
Mar 11	Meta	*Nardelli et al., Signa Vitae, do…*	death, ↓79.5%, p<0.0001	Crying wolf in time of Corona: the strange case of ivermectin and hydroxychlor…
	Details	Meta analysis of RCT mortality results showing RR 0.19, $p < 0.00001$.		
Mar 11	Meta	*Scheim et al., OSF Preprints (…*	meta-analysis	Ivermectin sales in Valle del Cauca, Colombia, patterns of AEs, and other back…
	Details	Analysis of several issues with López-Medina et al. including the atypical adverse effects in the control arm and population use of ivermectin.		
Mar 11	Meta	*Scheim et al., OSF Preprints (…*	meta-analysis	Protocol violations in López-Medina et al.: 38 switched ivermectin (IVM) and pl…
	Details	Report on protocol violations in López-Medina et al.		
Mar 10	In Vit…	*Yesilbag et al., Virus Researc…*	*in vitro*	Ivermectin also inhibits the replication of bovine respiratory viruses (BRSV, BPI…
	Details	*In Vitro* study showing that ivermectin can inhibit infection of bovine respiratory disease viral agents BCoV, BPIV-3, BVDV, BRSV and BoHV-1 at the conc…		
Mar 9	Late	*Pott-Junior et al., Toxicology …*	ventilation, ↓85.2%, p=0.25	Use of ivermectin in the treatment of Covid-19: a pilot trial
	Details	Very small RCT with 4 control patients and 28 ivermectin patients split across 3 different dosage levels, showing lower (non-statistically significant) IC…		

Mar 8	Early	*Chamie-Quintero et al., OSF Preprints (Preprint)*		Ivermectin for COVID-19 in Peru: 14-fold reduction in nationwide excess deaths…
	Details	Analysis of ivermectin use in Peru concluding that ivermectin most likely caused a 14 times reduction in excess deaths in Peru, prior to a 13 times incre…		
Mar 8	Late	*Guzman et al., medRxiv, doi:10.1101/2021.03.04.21252084 (Prepri…*		Factors associated with increased mortality in critically ill COVID-19 patients i…
	Details	Retrospective 196 critically ill patients in Mexico. Patients overlap with the existing RCT by Beltran-Gonzalez (NCT04391127). This preprint shows a lar…		
Mar 8	Late	*Galan et al., Pathogens and Global Health, doi:10.1080/20477724.2…*		Phase 2 randomized study on chloroquine, hydroxychloroquine or ivermectin i…
	Details	RCT 168 very late stage severe condition hospitalized patients comparing CQ, HCQ, and ivermectin not showing significant differences. Authors were u…		
Mar 5	Safety	*Descotes, J., ImmunoSafe Co…*	safety analysis	Medical Safety of Ivermectin
	Details	Safety analysis of >350 articles showing that ivermectin has an excellent safety profile. The author notes that "no severe adverse event has been report…		
Mar 4	Early	*López-Medina et al., JAMA, d…*	death, ↓66.8%, p=0.50	Effect of Ivermectin on Time to Resolution of Symptoms Among Adults With M…
	Details	An open letter, signed by >100 physicians, concluding this study is fatally flawed can be found at [1]. Phone survey based RCT with low risk patients, 20…		
Mar 1	In Sili…	*Saha et al., Structural Chemistry, doi:10.1007/s11224-021-01776-0 …*		The Binding mechanism of ivermectin and levosalbutamol with spike protein o…
	Details	*In SIlico* analysis predicting that ivermectin has a large binding affinity for the SARS-CoV-2 spike protein. Three different computer modeling techniques …		
Feb 23	Late	*Gonzalez et al., medRxiv, doi:…*	death, ↓14.4%, p=1.00	Efficacy and safety of Ivermectin and Hydroxychloroquine in patients with seve…
	Details	RCT late stage severe condition (93% SOFA ≥ 2, 96% APACHE ≥ 8) high comorbidity hospitalized patients in Mexico with 36 low dose ivermectin and 37…		
Feb 20	News	*BIRD Meeting 20th February …*	news	BIRD Meeting 20th February 2021
	Details	The British Ivermectin Recommendation Development (BIRD) panel, with dozens of multi-national scientists & doctors, issued sweeping recommendati…		
Feb 16	Early	*Elalfy et al., J. Med. Virol., doi…*	viral+, ↓86.9%, p<0.0001	Effect of a combination of Nitazoxanide, Ribavirin and Ivermectin plus zinc su…
	Details	Non-randomized controlled trial with 62 mild and early moderate patients with home treatment with ivermectin + nitazoxanide + ribavirin + zinc, showi…		
Feb 15	PrEP…	*Behera et al., Cureus 13:8, do…*	cases, ↓83.0%, p<0.001	Prophylactic Role of Ivermectin in Severe Acute Respiratory Syndrome Coronav…
	Details	Prospective prophylaxis study with 3,532 healthcare workers, 2,199 receiving two-dose ivermectin prophylaxis, showing adjusted relative risk of confir…		
Feb 12	Early	*Biber et al., medRxiv, doi:10.1…*	hosp., ↓70.2%, p=0.34	Favorable outcome on viral load and culture viability using Ivermectin in early …
	Details	Double blind RCT for mild-moderate COVID-19 outpatients in Israel showing significantly faster reduction in viral load with treatment, and lower hospita…		
Feb 10	Late	*Lima-Morales (Peer Reviewed)*	death, ↓77.7%, p<0.001	Effectiveness of a multidrug therapy consisting of ivermectin, azithromycin, m…
	Details	Prospective trial of 768 COVID-19 outpatients in Mexico, 481 treated with ivermectin, AZ, montelukast, and aspirin, and 287 control patients with variou…		
Feb 2	Early	*Mohan et al., Research Squar…*	no recov., ↓62.5%, p=0.27	Ivermectin in mild and moderate COVID-19 (RIVET-COV): a randomized, placeb…
	Details	RCT in India with low risk patients, comparing 24mg ivermectin, 12mg ivermectin, and placebo showing non-statistically significant improvements in re…		
Jan 29	Meta	*Cobos-Campos et al., Clin. R…*	meta-analysis	Potential use of ivermectin for the treatment and profilaxis of SARS-CoV-2 infe…
	Details	Review finding that there appears to be sufficient evidence to recommend ivermectin for the treatment of COVID-19, especially in the early stages of the …		
Jan 27	Meta	*Castaneda-Sabogal et al., m…*	meta-analysis	Outcomes of Ivermectin in the treatment of COVID-19: a systematic review and…
	Details	Student-written meta analysis of a very small subset of studies exhibiting very high bias and significant flaws. Some of the problems: - As of the public…		
Jan 25	In Sili…	*Eweas et al., Frontiers in Microbiology, doi:10.3389/fmicb.2020.592…*		Molecular Docking Reveals Ivermectin and Remdesivir as Potential Repurpose…
	Details	Molecular docking analysis showing that ivermectin efficiently binds to the viral S protein as well as the human cell surface receptors ACE-2 and TMPR…		
Jan 23	Anim…	*Errecalde et al., Journal of Ph…*	animal study	Safety and Pharmacokinetic Assessments of a Novel Ivermectin Nasal Spray F…
	Details	Animal study of a novel spray formulation of ivermectin, showing an advantage of the spray formulation in terms of fast attainment of high and persist…		
Jan 21	Early	*Chamie-Quintero et al., Preprint, doi:10.2139/ssrn.3765018 (Preprint)*		Sharp Reductions in COVID-19 Case Fatalities and Excess Deaths in Peru in Cl…
	Details	Analysis of ivermectin usage within states in Peru showing sharp reductions in COVID-19 deaths corresponding to the usage of ivermectin treatment.		
Jan 20	In Vit…	*Mody et al., Communications…*	*in vitro*	Identification of 3-chymotrypsin like protease (3CLPro) inhibitors as potential a…
	Details	Computational molecular modeling screening and *in vitro* analysis for inhibitory effects on SARS-CoV-2 specific 3CLpro enzyme, showing that ivermecti…		
Jan 19	Late	*Shahbaznejad et al., Clinical …*	death, ↑197.1%, p=1.00	Effect of ivermectin on COVID-19: A multicenter double-blind randomized contr…
	Details	RCT in Iran showing shorter time to recovery and shorter hospitalization time with ivermectin. There were no adverse effects. There was one death in th…		
Jan 19	Meta	*Hill et al., Research Square, d…*	death, ↓75.0%, p=0.0002	Meta-analysis of randomized trials of ivermectin to treat SARS-CoV-2 infection
	Details	Meta analysis of 18 ivermectin RCTs with 2,282 patients showing faster viral clearance (dose and duration dependent), improved clinical recovery, and l…		
Jan 16	Early	*Samaha et al., Viruses, doi:1…*	hosp., ↓85.7%, p=0.24	Effects of a Single Dose of Ivermectin on Viral and Clinical Outcomes in Asymp…
	Details	RCT 100 patients in Lebanon, showing significantly lower viral load at day 3, and lower hospitalization. All patients also took zinc and vitamin C. ChiCT…		
Jan 16	Early	*Bukhari et al., medRxiv, doi:1…*	viral+, ↓82.4%, p<0.0001	Efficacy of Ivermectin in COVID-19 Patients with Mild to Moderate Disease
	Details	RCT of relatively low risk hospitalized patients with 50 ivermectin and 50 control patients showing significantly faster viral clearance with treatment. 9 …		
Jan 13	Revie…	*Kory et al., Frontiers in Phar…*	review	Review of the Emerging Evidence Demonstrating the Efficacy of Ivermectin in t…
	Details	Meta analysis of ivermectin clinical studies and natural experiments where ivermectin has been widely used, showing efficacy of ivermectin in prophyla…		

Jan 12	Late	*Okumuş et al., BMC Infectiou…*	death, ↓33.3%, p=0.55	Evaluation of the Effectiveness and Safety of Adding Ivermectin to Treatment i…
	Details	Small RCT for severe COVID-19 comparing the addition of ivermectin to SOC (low dose HCQ+AZ+favipiravir), with 30 treatment and 30 control patients i…		
Jan 11	PrEP…	*Chahla et al., medRxiv, doi:1…*	m/s case, ↓95.2%, p=0.002	A randomized trial - intensive treatment based in ivermectin and iota-carragee…
	Details	Prophylaxis RCT for ivermectin and iota-carrageenan in Argentina, 117 healthcare workers treated with ivermectin and iota-carrageenan, and 117 contr…		
Jan 11	N/A	*Bousquet-Melou et al., Prepri…*	dosing study	Large Impact of obesity on the disposition of ivermectin, moxidectin and eprin…
	Details	Animal dosing study with an obese dog model concluding that ivermectin maintenance doses should be based on lean body weight and not the total b…		
Jan 10	Revie…	*Formiga et al., J. Control Rel…*	review	Ivermectin: an award-winning drug with expected antiviral activity against COV…
	Details	Review hypothesizing that micro- and nanotechnology-based formulations of ivermectin for the pulmonary delivery of ivermectin may be beneficial for …		
Jan 9	Early	*Ravikirti et al., Journal of Pha…*	death, ↓88.7%, p=0.12	Ivermectin as a potential treatment for mild to moderate COVID-19: A double bl…
	Details	RCT with 112 mild and moderate COVID-19 patients in India, showing lower mortality, ventilation, and ICU admission, although not statistically signific…		
Jan 8	Early	*Chamie, J. (News)*	news	COVID-19 in Mexico
	Details	Comparison of COVID-19 death rates in Mexico showing that the only state using ivermectin has a dramatically lower rate.		
Jan 6	Early	*Babalola et al., QJM: An Inter…*	viral+, ↓63.9%, p=0.11	Ivermectin shows clinical benefits in mild to moderate COVID19: A randomised…
	Details	Small RCT comparing ivermectin 6mg & 12mg q84hr with lopinavir/ritonavir, showing a statistically significant and dose dependent effect of ivermectin…		
Jan 6	PrEP…	*Hirsch et al., Microbiology & Infectious Diseases (Peer Reviewed)*		Ivermectin as Prophylaxis Against COVID-19 Retrospective Cases Evaluation
	Details	Report on ivermectin prophylaxis for healthcare workers in a hospital in Argentina, showing 0 cases in the 162 participants. Dosage was 0.2mg/kg wee…		
Jan 3	Early,…	*Lawrie et al., Preprint (Prepri…*	death, ↓83.0%, p<0.0001	Ivermectin reduces the risk of death from COVID-19 – a rapid review and meta-…
	Details	Meta analysis confirming the effectiveness of ivermectin for COVID-19, showing ivermectin treatment mortality relative risk RR 0.17 [0.18-0.35] and pro…		
Dec 31 2020	Late	*Wijaya et al., Cermin Dunia Kedokteran, 47:7 (Peer Reviewed)*		Ivermectin as a Potential Therapeutic Agent for COVID-19 – case studies
	Details	Case report on 3 confirmed cases of COVID-19 with significant clinical and radiological improvement after a single dose of ivermectin.		
Dec 31 2020	Anim…	*Madrid et al., Heliyon, doi:10.…*	animal study	Safety of oral administration of high doses of ivermectin by means of biocomp…
	Details	*In vivo* analysis of the safety of high dose ivermectin with a Corydoras fish animal model.		
Dec 30 2020	Revie…	*McCullough et al., Reviews i…*	review	Multifaceted highly targeted sequential multidrug treatment of early ambulator…
	Details	Review urging early treatment of COVID-19 with sequential multidrug treatment that has been shown to be safe and effective. Proposed treatment inclu…		
Dec 30 2020	Early	*Procter et al., Reviews in Cardiovascular Medicine, doi:10.31083/j.rc…*		Clinical outcomes after early ambulatory multidrug therapy for high-risk SARS-…
	Details	Retrospective 922 outpatients, with 320 treated early due to age>50 or comorbidities, showing 2.2% hospitalization and 0.3% death, which authors note…		
Dec 27 2020	Meta	*Hill, A., Preprint (Preprint) (m…*	meta-analysis	Meta-analysis of clinical trials of ivermectin to treat COVID-19 infection
	Details	WHO-funded meta analysis showing ivermectin treatment mortality relative risk RR 0.17 [0.08-0.35] for RCTs and RR 0.28 [0.13-0.62] for RCTs and obse…		
Dec 24 2020	In Vit…	*Jeffreys et al., bioRxiv, doi:10…*	*in vitro*	Remdesivir-Ivermectin combination displays synergistic interaction with impro…
	Details	*In Vitro* study showing enhanced antiviral activity of ivermectin and remdesivir in combination.		
Dec 20 2020	PrEP…	*Vallejos et al., Preliminary Re…*	cases, ↓73.4%, p<0.0001	Ivermectina en agentes de salud e IVERCOR COVID19
	Details	Report on ivermectin prophylaxis in a hospital in Argentina showing lower cases for healthcare workers taking ivermectin. Preliminary results from: [1].		
Dec 18 2020	Early,…	*Kory et al., FLCCC Alliance (P…*	death, ↓69.0%, p<0.0001	Review of the Emerging Evidence Demonstrating the Efficacy of Ivermectin in t…
	Details	Meta analysis of ivermectin clinical studies and natural experiments where ivermectin has been widely used, showing efficacy of ivermectin in prophyla…		
Dec 15 2020	PrEP…	*Alam et al., European Journa…*	cases, ↓90.6%, p<0.0001	Ivermectin as Pre-exposure Prophylaxis for COVID-19 among Healthcare Provi…
	Details	91% reduction in COVID-19 cases with ivermectin prophylaxis. 118 healthcare workers in Bangladesh, 58 receiving ivermectin 12mg monthly, showing …		
Dec 15 2020	Early	*Afsar et al., SSRN (Preprint)*	symptoms, ↓92.2%, p=0.04	Ivermectin Use Associated with Reduced Duration of COVID-19 Febrile Illness i…
	Details	Small 95 patient study in Pakistan adding ivermectin to standard of care (HCQ+AZ) for outpatients with mild/moderate suspected COVID-19, showing f…		
Dec 11 2020	Early	*Hussain et al., International Journal of Molecular and Immuno Onco…*		Outcome of ivermectin and doxycycline in cancer patients with COVID-19: A po…
	Details	Small case study of ivermectin + doxycycline with 8 cancer patients, with all patients becoming PCR- by day 6 when tested again.		
Dec 7 2020	Early	*Chaccour et al., EClinicalMed…*	symp. prob., ↓52.9%, p<0.05	The effect of early treatment with ivermectin on viral load, symptoms and hum…
	Details	Tiny RCT for early treatment of mild COVID-19 in low risk patients, with 12 400mcg/kg single dose ivermectin patients and 12 control patients, showing…		
Dec 4 2020	Meta	*Kalfas et al., medRxiv, doi:10.…*	meta-analysis	The therapeutic potential of ivermectin for COVID-19: a systematic review of m…
	Details	Review of ivermectin mechanisms and 8 trials, showing positive mortality benefit, reduced time to clinical recovery, reduced incidence of disease progre…		
Dec 4 2020	In Vit…	*Surnar et al., ACS Pharmacol.…*	*in vitro*	Clinically Approved Antiviral Drug in an Orally Administrable Nanoparticle for C…
	Details	*In Vitro* analysis of ivermectin with orally administrable nanoparticles showing efficacy for decreasing expression of the viral spike protein and ACE2. In…		
Dec 2 2020	Early	*Ahmed et al., International Jo…*	symptoms, ↓85.0%, p=0.09	A five day course of ivermectin for the treatment of COVID-19 may reduce the d…
	Details	Small 72 patient RCT of ivermectin and ivermectin + doxycycline showing faster recovery with ivermectin. Ivermectin group: 12mg daily for 5 days Iver…		

Dec 2 2020	Early	*Chamie, J. (News)*	news	The effect of using ivermectin to control COVID-19 in Chiapas
	Details	After starting to distribute ivermectin in drug kits in July, the Mexican state of Chiapas has seen a dramatic divergence from other states with much low…		
Dec 1 2020	Early	***Alonso** et al., (Preprint)*	death, ↓**91.8%**, p=0.009	COVID-19: Uso de ivermectina
	Details	Observational study in Argentina showing significantly lower mortality in the 60 days after adopting ivermectin compared to the 60 days before, relative…		
Nov 28 2020	PrEP…	***Bernigaud** et al., Annals of D…*	death, ↓**99.4%**, p=0.08	Ivermectin benefit: from scabies to COVID-19, an example of serendipity
	Details	69 residents of a French care home, median age 90, were treated with ivermectin for a scabies outbreak. 3,062 residents in 45 nearby comparable home…		
Nov 28 2020	PrEP…	***Hellwig** et al., International J…*	cases, ↓**78.0%**, p<0.02	A COVID-19 Prophylaxis? Lower incidence associated with prophylactic admini…
	Details	Analysis of COVID-19 cases vs. widespread prophylactic use of ivermectin for parasitic infections showing significantly lower incidence of COVID-19 ca…		
Nov 24 2020	Late	***Niaee** et al., Asian Pacific Jo…*	death, ↓**81.8%**, p=0.001	Ivermectin as an adjunct treatment for hospitalized adult COVID-19 patients: A …
	Details	82% lower mortality with ivermectin. RCT with 180 hospitalized patients showing reduced mortality and hospital stay with ivermectin, with a wide marg…		
Nov 22 2020	Anim…	***de Melo** et al., EMBO Mol. M…*	animal study	Attenuation of clinical and immunological outcomes during SARS-CoV-2 infect…
	Details	Animal study showing that standard doses of ivermectin prevented clinical deterioration, reduced olfactory deficit, and limited the inflammation of the u…		
Nov 18 2020	Late	***Budhiraja** et al., medRxiv, doi…*	death, ↓**99.1%**, p=0.04	Clinical Profile of First 1000 COVID-19 Cases Admitted at Tertiary Care Hospita…
	Details	Retrospective 976 hospitalized patients with 34 treated with ivermectin showing ivermectin mortality relative risk RR 0.13, p = 0.04.		
Nov 17 2020	PrEP…	***Carvallo** et al., Journal of Bio…*	cases, ↓**99.9%**, p<0.0001	Study of the Efficacy and Safety of Topical Ivermectin + Iota-Carrageenan in th…
	Details	Prophylaxis study using ivermectin and iota-carrageenan showing 0 of 788 cases from treated healthcare workers, compared to 237 of 407 control. Th…		
Nov 14 2020	Late	***Spoorthi** et al., IAIM, 2020, 7:…*	recov. time, ↓**21.1%**, p=0.03	Utility of Ivermectin and Doxycycline combination for the treatment of SARSCo…
	Details	100 patient prospective trial of ivermectin + doxycycline showing reduced time to symptom resolution and shorter hospital stay with treatment.		
Nov 13 2020	Late	***Elgazzar** et al., Research Square, doi:10.21203/rs.3.rs-100956/v2 (P…*		Efficacy and Safety of Ivermectin for Treatment and prophylaxis of COVID-19 P…
	Details	This study was withdrawn.		
Nov 11 2020	Late	***Camprubí** et al., PLoS ONE, 1…*	ventilation, ↓**40.0%**, p=0.67	Lack of efficacy of standard doses of ivermectin in severe COVID-19 patients
	Details	Tiny 26 patients retrospective study of ivermectin 200 µg/kg, median 12 days after symptoms, not showing significant differences. Authors suggest the…		
Nov 10 2020	Revie…	***Turkia**, M., ResearchGate (Re…*	review	FLCCC Alliance MATH+ ascorbic acid and I-MASK+ ivermectin protocols for CO…
	Details	Review suggesting that ivermectin should be used based on existing data suggesting significant benefits, and that waiting for additional data may resu…		
Nov 4 2020	Early	***Cadegiani** et al., New Microb…*	death, ↓**78.3%**, p=0.50	Early COVID-19 Therapy with azithromycin plus nitazoxanide, ivermectin or hy…
	Details	Comparison of HCQ, nitazoxanide, and ivermectin showing similar effectiveness for overall clinical outcomes in COVID-19 when used before seven day…		
Nov 3 2020	Early,…	***Morgenstern** et al., J. Clinical Trials (preprint 11/3) (Peer Reviewed)*		The Use of Compassionate Ivermectin in the Management of SymptomaticOut…
	Details	Retrospective 3,099 outpatients treated with ivermectin in an ER. Of 2,706 treated on an outpatient basis, 18 were subsequently hospitalized, 2 in the IC…		
Nov 3 2020	PrEP…	***Behera** et al., PLoS ONE, doi:…*	cases, ↓**53.8%**, p<0.0001	Role of ivermectin in the prevention of SARS-CoV-2 infection among healthcare…
	Details	Retrospective matched case-control prophylaxis study for HCQ, ivermectin, and vitamin C with 372 healthcare workers, showing lower COVID-19 incide…		
Nov 2 2020	Anim…	***Arévalo** et al., Scientific Repo…*	animal study	Ivermectin reduces in vivo coronavirus infection in a mouse experimental model
	Details	Mouse study showing ivermectin reducing MHV viral load and disease. MHV is a type 2 family RNA coronavirus similar to SARS-CoV2.		
Oct 31 2020	PrEP…	***Chang** et al., ResearchGate (Preprint)*		COVID-19: Effectiveness of pre-exposure prophylaxis with ivermectin in expose…
	Details	Pre-exposure prophylaxis study with 129 people split into high/low exposure groups, with each group split into different dosing regimens, showing high…		
Oct 31 2020	Early	***Szente Fonseca** et al., Travel …*	hosp., ↑**13.9%**, p=0.45	Risk of Hospitalization for Covid-19 Outpatients Treated with Various Drug Reg…
	Details	Retrospective 717 patients in Brazil showing OR 1.17 [0.72-1.90] for ivermectin. This paper focuses on HCQ, event counts for ivermectin are not provide…		
Oct 26 2020	Late	***Hashim** et al., Iraqi Journal o…*	death, ↓**91.7%**, p=0.03	Controlled randomized clinical trial on using Ivermectin with doxycycline for tr…
	Details	RCT 70 ivermectin+doxycycline patients and 70 control patients showing reduced time to recovery and reduced mortality with treatment. Earlier treatm…		
Oct 22 2020	PrEP…	***Guerrero** et al., Colombia Médica, doi:10.25100/cm.v51i4.4613 (Pee…*		COVID-19: The Ivermectin African Enigma
	Details	Study of African Programme for Onchocerciasis Control (APOC) countries, which used ivermectin, with non-APOC countries in Africa, showing 28% lowe…		
Oct 19 2020	PrEP…	***Carvallo** et al., NCT04425850…*	cases, ↓**96.3%**, p<0.0001	Usefulness of Topic Ivermectin and Carrageenan to Prevent Contagion of Covi…
	Details	Prophylaxis study using ivermectin and carrageenan showing 0 of 131 cases from treated healthcare workers, compared to 11 of 98 control. The effect …		
Oct 13 2020	Anim…	***Chaccour** et al., Scientific Re…*	animal study	Nebulized ivermectin for COVID-19 and other respiratory diseases, a proof of c…
	Details	Study showing that nebulized ivermectin can reach pharmacodynamic concentrations in the lung tissue of rats. Authors note that additional experimen…		
Oct 13 2020	Late	***Rajter** et al., Chest, doi:10.10…*	death, ↓**46.0%**, p=0.04	Use of Ivermectin is Associated with Lower Mortality in Hospitalized Patients …
	Details	Retrospective 280 hospitalized patients showing lower mortality with ivermectin (13.3% vs 24.5%), propensity matched odds ratio OR 0.47 [0.22-0.99], …		
Oct 9 2020	Early	***Mahmud** et al., Journal of Int…*	death, ↓**85.7%**, p=0.25	Ivermectin in combination with doxycycline for treating COVID-19 symptoms: a…
	Details	RCT for ivermectin+doxycycline showing improvements in mortality, recovery, progression, and virological cure. 183 treatment and 183 control patients …		

Oct 8 2020	In Sili…	*Francés-Monerris et al., ChemRxiv, doi:10.26434/chemrxiv.1278225…*		Has Ivermectin Virus-Directed Effects against SARS-CoV-2? Rationalizing the A…
	Details	*In silico* study showing that ivermectin is capable of interfering in different key steps of the SARS-CoV-2 replication cycle.		
Oct 8 2020	Late	*Soto-Becerra et al., medRxiv, …*	death, ↓17.1%, p=0.01	Real-World Effectiveness of hydroxychloroquine, azithromycin, and ivermectin …
	Details	Retrospective database study of 5683 patients, 692 received HCQ/CQ+AZ, 200 received HCQ/CQ, 203 received ivermectin, 1600 received AZ, 358 receiv…		
Sep 30 2020	Late	*Chachar et al., International J…*	no recov., ↓10.0%, p=0.50	Effectiveness of Ivermectin in SARS-CoV-2/COVID-19 Patients
	Details	Small RCT with 25 ivermectin and 25 control patients, not finding a significant difference in recovery at day 7.		
Sep 24 2020	Late	*Khan et al., Archivos de Bron…*	death, ↓87.0%, p<0.05	Ivermectin treatment may improve the prognosis of patients with COVID-19
	Details	Retrospective 115 ivermectin patients and 133 control patients showing significantly lower death and faster viral clearance. Some potential issues and …		
Sep 22 2020	In Vit…	*Li et al., J. Cellular Physiolog…*	*in vitro*	Quantitative proteomics reveals a broad-spectrum antiviral property of iverme…
	Details	*In Vitro* study showing Ivermectin is a safe wide-spectrum antiviral against SARS-CoV-2, human papillomavirus (HPV), Epstein–Barr virus (EBV), and HI…		
Sep 15 2020	Early	*Carvallo et al., Journal of Cli…*	death, ↓85.4%, p=0.08	Safety and Efficacy of the Combined Use of Ivermectin, Dexamethasone, Enoxa…
	Details	Prospective trial of ivermectin, dexamethasone, enoxaparin, and aspirin, showing no hospitalization for mild cases, and lower mortality for moderate/se…		
Sep 15 2020	Revie…	*Jans et al., Cells 2020, 9:9, 2…*	review	Ivermectin as a Broad-Spectrum Host-Directed Antiviral: The Real Deal?
	Details	Review of ivermectin as a host-directed broad-spectrum antiviral agent for a range of viruses, including SARS-CoV-2. Cell culture experiments show rob…		
Sep 9 2020	In Slli…	*Swargiary, A., Research Square, doi:10.21203/rs.3.rs-73308/v1 (Pre…*		Ivermectin as a promising RNA-dependent RNA polymerase inhibitor and a the…
	Details	*In Silico* study showing high binding affinity of ivermectin with SARS-CoV-2 RNA-dependent RNA polymerase, suggesting ivermectin as an inhibitor of R…		
Sep 6 2020	Revie…	*DiNicolantonio et al., Open H…*	review	Ivermectin may be a clinically useful anti-inflammatory agent for late-stage CO…
	Details	Review suggesting that ivermectin may be useful for late stage COVID-19. Authors note that ivermectin, in doses at or modestly above the standard clin…		
Sep 3 2020	Late	*Podder et al., IMC J. Med. Sci…*	recov. time, ↓16.1%, p=0.34	Outcome of ivermectin treated mild to moderate COVID-19 cases: a single-cent…
	Details	Small RCT with 32 ivermectin patients and 30 control patients. The mean recovery time after enrolment in the intervention arm was 5.31 ± 2.48 days vs…		
Aug 31 2020	Late	*Kishoria et al., Paripex - India…*	no disch., ↑7.5%, p=1.00	Ivermectin as adjuvant to hydroxychloroquine in patients resistant to standard…
	Details	Small RCT of hospitalized patients in India with 19 ivermectin patients and 13 control patients, with all receiving SOC including HCQ, showing no signifi…		
Aug 28 2020	PrEP…	*Shouman et al., Journal of Cl…*	symp. case, ↓91.3%, p<0.001	Use of Ivermectin as a Potential Chemoprophylaxis for COVID-19 in Egypt: A R…
	Details	PEP trial for asymptomatic close contacts of COVID-19 patients, 203 ivermectin patients and 101 control patients. 7.4% of contacts developed COVID-1…		
Aug 15 2020	Early	*Espitia-Hernandez et al., Bio…*	viral+, ↓97.2%, p<0.0001	Effects of Ivermectin-azithromycin-cholecalciferol combined therapy on COVID…
	Details	Small study with 28 patients treated with ivermectin + AZ + cholecalciferol and 7 control patients. All treated patients were PCR- at day 10 while all cont…		
Aug 14 2020	Late	*Bhattacharya et al., Int. J. Scientific Research, doi:10.36106/ijsr/723…*		Observational Study on Clinical Features, Treatment and Outcome of COVID 19…
	Details	Retrospective 148 hospitalized patients showing triple therapy with ivermectin + atorvastatin + N-acetylcysteine resulted in a 1.35% case fatality rate w…		
Jul 31 2020	Revie…	*Vora et al., Indian Journal of …*	review	White paper on Ivermectin as a potential therapy for COVID-19
	Details	Panel review of ivermectin reporting that "ivermectin in the dose of 12mg BD alone or in combination with other therapy for 5–7 days may be considere…		
Jul 31 2020	Late	*Chang et al., ResearchGate (Preprint)*		Post-acute or prolonged COVID-19: ivermectin treatment for patients with persi…
	Details	Report on 33 patients with persistent or post-acute symptoms treated with ivermectin, showing a high rate of clinical improvement.		
Jul 31 2020	Theo…	*Chang et al., ResearchGate, d…*	theory	COVID-19: Post-exposure prophylaxis with ivermectin in contacts. At Homes, P…
	Details	Proposed PEP protocol based on ivermectin.		
Jul 31 2020	Late	*Alam et al., Journal of Bangladesh College of Physicians and Surge…*		A Case Series of 100 COVID-19 Positive Patients Treated with Combination of I…
	Details	Case study of 100 patients treated with ivermectin and doxycycline, with no ICU admission, deaths, or serious side effects reported.		
Jul 31 2020	Late	*Rahman et al., J. Bangladesh Coll. Phys. Surg. 38, 5-9, doi:10.3329/…*		Comparison of Viral Clearance between Ivermectin with Doxycycline and Hydr…
	Details	Comparison of 200 patients treated with ivermectin + doxycycline and 200 treated with HCQ + AZ. The HCQ + AZ group had more severe cases at basel…		
Jul 14 2020	Early	*Chowdhury et al., Eurasian J…*	hosp., ↓80.6%, p=0.23	A Comparative Study on Ivermectin-Doxycycline and Hydroxychloroquine-Azit…
	Details	Small 116 patient RCT with low-risk patients comparing ivermectin+doxycycline and HCQ+AZ, showing lower hospitalization, higher viral clearance, an…		
Jul 8 2020	Late	*Gorial et al., medRxiv, doi:10.…*	death, ↓71.0%, p=1.00	Effectiveness of Ivermectin as add-on Therapy in COVID-19 Management (Pilo…
	Details	Small trial of hospitalized patients with 16 of 87 patients being treated with ivermectin showing a significantly lower mean hospital stay with ivermecti…		
Jun 19 2020	In Sili…	*Lehrer et al., In Vivo, 34:5, 3023-3026, doi:10.21873/invivo.12134*		Ivermectin Docks to the SARS-CoV-2 Spike Receptor-binding Domain Attached …
	Details	*In silico* analysis showing ivermectin docking which may interfere with the attachment of the spike to the human cell membrane.		
Jun 16 2020	Early	*Ramos et al., Preprint (Preprint)*		Intervención de la Ivermectina Pre-Hospitalaria para la Modificación de la Evol…
	Details	Prospective study of 63 outpatients in Peru treated with ivermectin, reporting significant improvement within 24 hours.		
Jun 12 2020	Revie…	*Heidary et al., The Journal of …*	review	Ivermectin: a systematic review from antiviral effects to COVID-19 complement…
	Details	Review of the antimicrobial, antiviral, and anti-cancer properties of ivermectin. Antiviral effects have been reported for Zika, dengue, yellow fever, West N…		

May 20 2020	Dosi…	***Arshad*** *et al., Clinical Pharma…*	dosing study	Prioritization of Anti-SARS-Cov-2 Drug Repurposing Opportunities Based on Pl…
	Details	Pharmacokinetic analysis predicting that ivermectin will achieve lung concentration over 10 times higher than the reported EC_{50}.		
May 2 2020	Early	***Chang****, G., Research Gate, doi:10.13140/RG.2.2.34689.48482/7 (Pr…*		Inclusión de la ivermectina en la primera línea de acción terapéutica para COVI…
	Details	Peru observational case study of 7 patients treated with ivermectin, showing improvement and resolution of fever within 48 hours, and 100% recovery.		
Apr 21 2020	Revie…	***Bray*** *et al., Antiviral Res., doi:…*	review	Ivermectin and COVID-19: A report in Antiviral Research, widespread interest, a…
	Details	Responses to Caly et al., and the author's reply. The original authors note that "ivermectin's key direct target in mammalian cells is a not a viral compon…		
Apr 3 2020	In Vit…	***Caly*** *et al., Antiviral Research,…*	*in vitro*	The FDA-approved drug ivermectin inhibits the replication of SARS-CoV-2 in vit…
	Details	*In Vitro* study showing that ivermectin is an inhibitor of SARS-CoV-2, with a single addition to Vero-hSLAM cells 2h post infection with SARS-CoV-2 able …		
2013	N/A	***Guzzo*** *et al., J. Clinical Phar…*	safety analysis	Safety, Tolerability, and Pharmacokinetics of Escalating High Doses of Ivermec…
	Details	Safety study concluding that ivermectin was generally well tolerated, with no indication of associated CNS toxicity for doses up to 10 times the highest …		

For search methods, inclusion criteria, effect extraction criteria (more serious outcomes have priority), PRISMA answers, and statistical methods see ivmmeta.com. Meta, Theory, Safety, Review, and News items are not included in the study count. There is a total of 165 items. Studies with preprints and journal versions are listed under the earlier preprint date.

Please send us corrections, updates, or comments. *Vaccines and treatments are both extremely valuable and complementary. All practical, effective, and safe means should be used. Elimination of COVID-19 is a race against viral evolution. No treatment, vaccine, or intervention is 100% available and effective for all current and future variants. Denying the efficacy of any method increases the risk of COVID-19 becoming endemic; and increases mortality, morbidity, and collateral damage. We do not provide medical advice. Before taking any medication, consult a qualified physician who can provide personalized advice and details of risks and benefits based on your medical history and situation. Treatment protocols for physicians are available from the FLCCC.*

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One Page Summary of the Clinical Trials Evidence for Ivermectin in COVID-19

Ivermectin, an anti-parasitic medicine whose discovery won the Nobel Prize in 2015, has proven, highly potent, anti-viral and anti-inflammatory properties in laboratory studies. In the past 4 months, numerous, controlled clinical trials from multiple centers and countries worldwide are reporting consistent, large improvements in COVID-19 patient outcomes when treated with ivermectin. Our comprehensive scientific review of these referenced trials can be found on the Open Science Foundation pre-print server here: https://osf.io/wx3zn/.

Properties of Ivermectin

1) Ivermectin inhibits the replication of many viruses, including SARS-CoV-2, influenza, and others;
2) Ivermectin has potent anti-inflammatory properties with multiple mechanisms of inhibition;
3) Ivermectin diminishes viral load and protects against organ damage in animal models;
4) Ivermectin prevents transmission of COVID-19 when taken either pre- or post-exposure;
5) Ivermectin hastens recovery and decreases hospitalization and mortality in patients with COVID-19;
6) Ivermectin leads to far lower case-fatality rates in regions with widespread use.

Evidence Base Supporting the Efficacy of Ivermectin in COVID-19

as of January 11, 2021

(RCT's = randomized controlled trials, OCT's = observational controlled trials). Every clinical trial shows a benefit, with RCT's and OCT's reporting the same direction and magnitude; nearly all are statistically significant.

Controlled trials studying the prevention of COVID-19 (8 trials completed)

- 3 RCT's with large statistically significant reductions in transmission rates, a total of 774 patients
- 5 OCT's with large statistically significant reductions in transmission rates, a total of 2,052 patients

Controlled trials in the treatment of both early and hospitalized COVID-19 patients (19 trials completed)

- 5 RCT's with large, significant reductions in time to recovery or hospital length of stay, a total of 774 patients
- 1 RCT with a large, statistically significant reduction in rate of deterioration/hospitalization, total of 363 patients
- 2 RCT's with significant decreases in viral load, days of anosmia, cough, or time to recovery, a total of 85 patients
- 3 RCT's with large, significant reductions in mortality, a total of 695 patients
- 3 OCT's with large, statistically significant reductions in mortality, a total of 1,688 patients

Number of Studies and Patients Among the Existing Clinical Trials of Ivermectin in COVID-19

- 27 controlled trials, including a total of 6,612 patients have been completed using well-matched control groups
- 16 trials, including over 2,500 patients, are prospective, randomized, controlled studies
- 11 of the 27 trials have been published in peer-reviewed journals, 3,900 patients, remainder are in pre-print

Front Line COVID-19 Critical Care Alliance – Recommendation on Ivermectin in COVID-19

Even restricting analysis to just the 16 randomized controlled trials (totaling over 2,500 patients), the majority report a statistically significant reduction in transmission or disease progression or mortality. Further, a meta-analysis recently performed by an independent research consortium calculated the chances that ivermectin is ineffective in COVID-19 to be 1 in 67 million.[1]

The FLCCC Alliance, based on the totality of the existing evidence, supports an A-I recommendation (NIH rating scheme; strong level, high quality evidence) for the use of ivermectin in both the prophylaxis and treatment of all phases of COVID-19.

Furthermore, we encourage all regulatory agencies to review our manuscript detailing these studies above as well as the multiple population-wide "natural experiments" that occurred in numerous cities and regions after the initiation of ivermectin distribution programs.[2] The widespread use of ivermectin resulted in a significant reduction in cases and mortality rates that approached pre-pandemic levels in these areas. As evidenced by what occurred in these regions, ivermectin is clearly an essential and vital treatment component in achieving control of the pandemic.

[1] **ivmmeta.com**

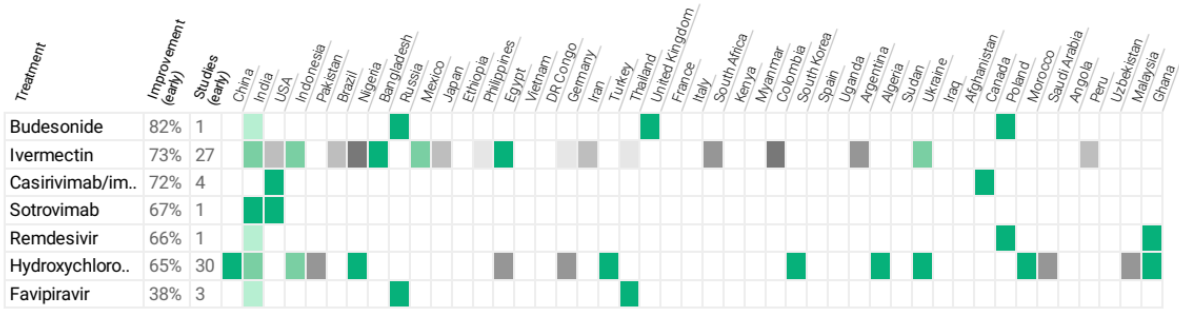
[2] Kory P, Meduri GU, Iglesias J, Varon J et al. Review of the Emerging Evidence Demonstrating the Efficacy of Ivermectin in the Prophylaxis and Treatment of COVID-19. *Open Science Foundation*. https://osf.io/wx3zn/

Addendum: C19 Early

COVID-19 early treatment: real-time analysis of 840 studies

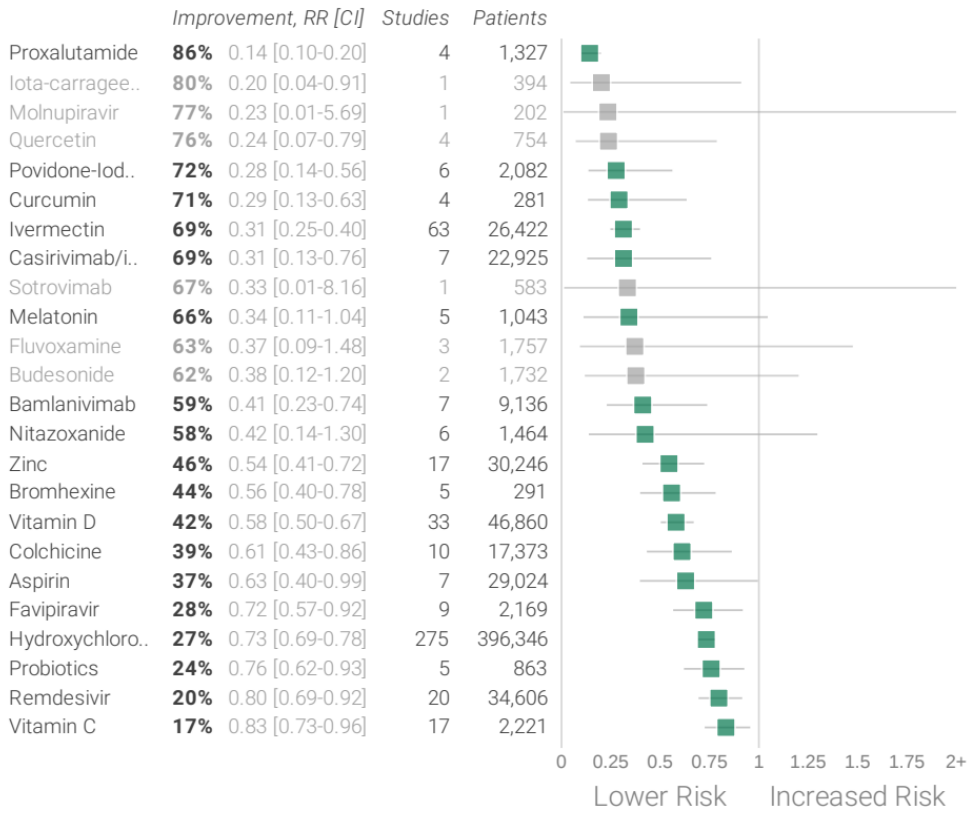
COVID-19 early treatment: real-time analysis of 840 studies

Analysis of the efficacy of early treatments for COVID-19. *Treatments do not replace vaccines and other measures. All practical, effective, and safe means should be used. Elimination of COVID-19 is a race against viral evolution. No treatment, vaccine, or intervention is 100% available and effective for all current and future variants. Denying the efficacy of any method increases the risk of COVID-19 becoming endemic; and increases mortality, morbidity, and collateral damage.*

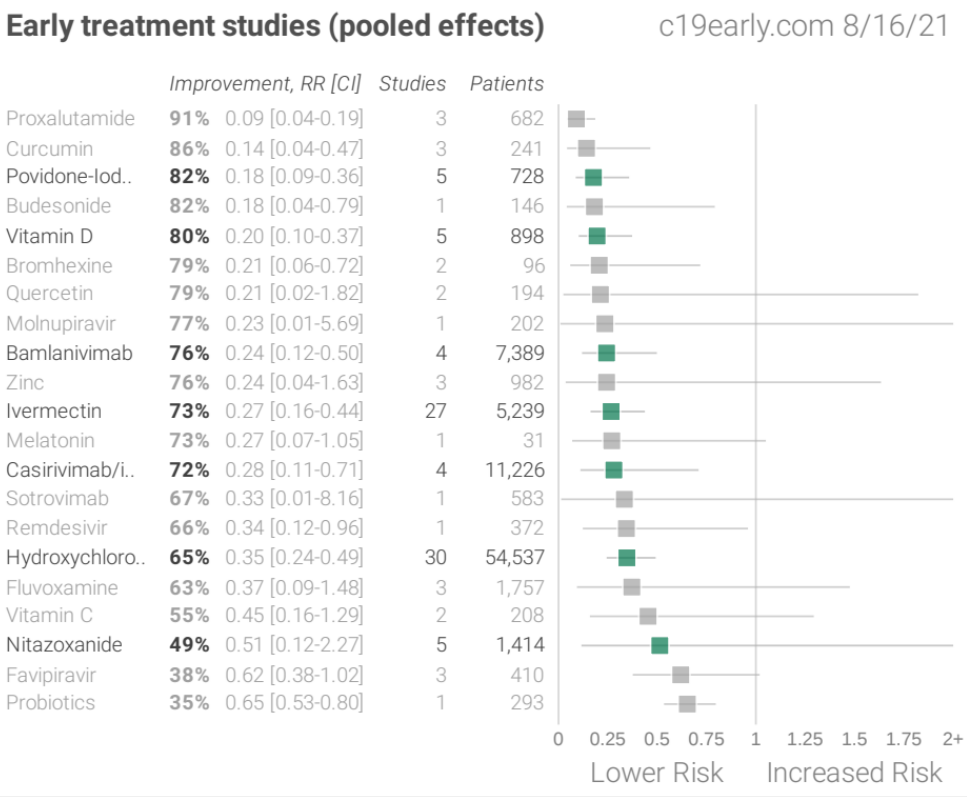


Medications approved for early treatment by >2 countries. 57 countries have officially approved early treatment.
For details see global early treatment adoption.

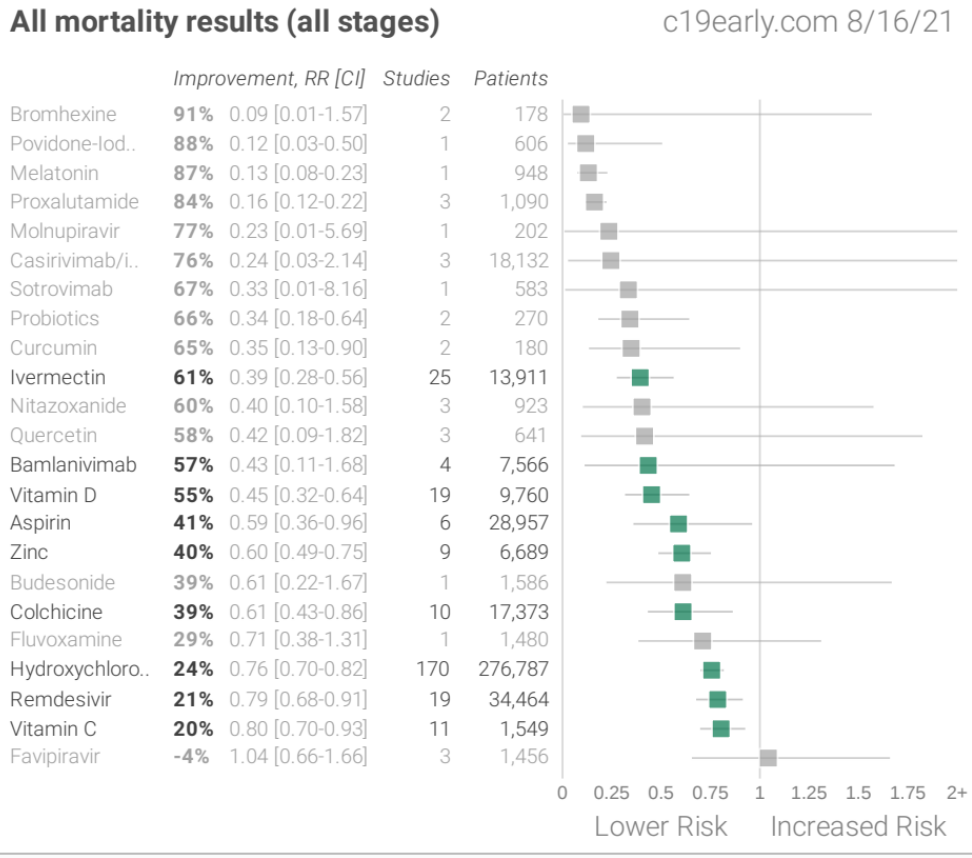
All studies combined (pooled effects, all stages) c19early.com 8/16/21



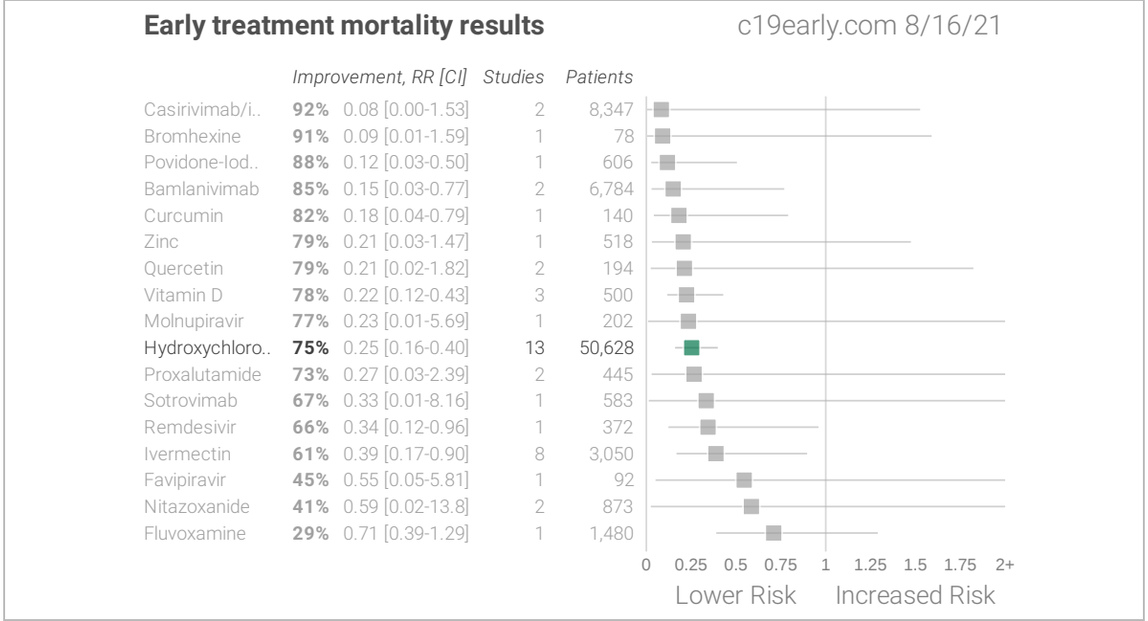
Random effects meta-analysis of all studies combined (pooled effects, all stages). Treatments with ≤3 studies or <25 control events are shown in grey. Pooled results across all stages and outcomes depend on the distribution of stages and outcomes tested - for example late stage treatment may be less effective and if the majority of studies are late stage this may obscure the efficacy of early treatment. Please see the specific stage and outcome analyses.



Random effects meta-analysis of early treatment studies (pooled effects). Treatments with ≤3 studies or <25 control events are shown in grey. Pooled results across all outcomes are affected by the distribution of outcomes tested, please see detail pages for specific outcome analysis.



Random effects meta-analysis of all mortality results (all stages). Treatments with ≤3 studies or <25 control events are shown in grey. Pooled results across all stages depend on the distribution of stages tested - for example late stage treatment may be less effective and if the majority of studies are late stage this may obscure the efficacy of early treatment. Please see the specific stage analyses.



Random effects meta-analysis of early treatment mortality results. Treatments with ≤3 studies or <25 control events are shown in grey.

Recent studies (see the individual treatment pages for all studies):

Aug 13	Late	***Hosseini*** *et al., medRxiv, doi:10.1101/2021.08.13.21261992 (Prepri...*		Another step toward final call on Remdesivir efficacy as a treatment for hospit...
	Details	Single arm remdesivir trial with 145 hospitalized patients showing no statistically significant difference between "early" and "late" administration, howe...		
Aug 12	Levels	***di Filippo*** *et al, The Journal o...*	death, ↓10.7%, p=1.00	Vitamin D levels associate with blood glucose and BMI in COVID-19 patients p...
	Details	Retrospective 88 patients in Italy, showing vitamin D deficiency associated with severe cases, blood glucose, and BMI.		
Aug 12	Late	***Elavarasi*** *et al., medRxiv, doi:...*	death, ↓19.6%, p=0.12	Clinical features, demography and predictors of outcomes of SARS-CoV-2 infec...
	Details	Retrospective 2017 hospitalized patients in India, showing lower mortality with ivermectin treatment in unadjusted results. No group details are provide...		
Aug 10	Levels	***Alpcan*** *et al., Epidemiology &...*	cases, ↓44.6%, p=0.0004	Vitamin D levels in children with COVID-19: a report from Turkey
	Details	Retrospective 75 COVID-19 hospitalized pediatric patients in Turkey and 80 healthy controls, showing significantly lower vitamin D levels in COVID-19 p...		
Aug 10	News	***La Pampa***, *Argentina (News)*	death, ↓27.4%	La Pampa expondrá a la comunidad científica los resultados del Programa de ...
	Details	News report on the use of ivermectin in La Pampa, Argentina, showing lower mortality with treatment.		
Aug 10	PEP	***Shabani*** *et al., Pulmonary Ph...*	symp. case, ↓19.0%, p=1.00	Evaluation of the Prophylactic Effect of Hydroxychloroquine on People in Close...
	Details	Small PEP trial with 51 HCQ patients, not showing a significant difference in cases. IRCT20130917014693N10.		
Aug 10	News	***Calderón*** *et al., News Report ...*	news	Mantiene Hospital Mónica Pretelini bajo índice de muertes Covid de mujeres e...
	Details	News report on the use of nitazoxanide for pregnant COVID-19 patients in a clinic in Mexico, reporting significant improvements in hospitalization and ...		
Aug 9	Late	***Kuno*** *et al., Journal of Antimi...*	death, ↓0.9%, p=0.96	The association of remdesivir and in-hospital outcomes for COVID-19 patients ...
	Details	PSM retrospective 3,372 hospitalized patients in the USA treated with steroids, showing no significant difference in mortality with remdesivir, but a lowe...		
Aug 6	Early	***Together Trial*** *(News)*	death, ↓18.0%, p=0.54	Early Treatment of COVID-19 with Repurposed Therapies: The TOGETHER Ada...
	Details	Preliminary report from the Together Trial showing mortality RR 0.82 [0.44-1.52]. Treatment delay is currently unknown, however the protocol allows ver...		
Aug 5	Levels	***Nimavat*** *et al., Annals of Me...*	death, ↓50.4%, p=0.17	Vitamin D deficiency and COVID-19: A case-control study at a tertiary care hos...
	Details	Case control study with 156 PCR+ cases in India and 204 controls, showing more frequent vitamin D deficiency in COVID-19 patients, and an associatio...		
Aug 5	Meta	***Anseems*** *et al., Cochrane Dat...*	meta-analysis	Remdesivir for the treatment of COVID-19
	Details	Review of 5 RCTs prior to April 17, 2021 showing mortality RR 0.93 [0.81-1.06] for hospitalized patients.		
Aug 5	Meta	***Stricker*** *et al., Journal of Infe...*	death, ↓75.0%, p<0.0001	Hydroxychloroquine Pre-Exposure Prophylaxis for COVID-19 in Healthcare Wor...
	Details	Meta analysis of 11 HCQ PrEP studies in India covering 7,616 healthcare workers, showing significantly lower cases with treatment.		
Aug 5	In Sili...	***Rana*** *et al., Research Square, doi:10.21203/rs.3.rs-755838/v1 (Prep...*		A Computational Study of Ivermectin and Doxycycline Combination Drug Agai...
	Details	*In silico* study showing strong binding affinity of ivermectin and doxycycline for SARS-CoV-2 main protease 3CLpro, and increased binding affinity for th...		
Aug 4	Late	***Zhang*** *et al., Therapeutic Adv...*	hosp. time, ↓13.6%, p=0.009	Probiotics use is associated with improved clinical outcomes among hospitali...
	Details	Retrospective 375 patients in China, 179 treated with probiotics, showing improved clinical outcomes with treatment.		
Aug 4	Late	***Özuygur Ermiş*** *et al., Turkish Journal of Medical Sciences, doi:10.39...*		The Efficacy of Hydroxychloroquine and Azithromycin Combination Therapy o...
	Details	Retrospective 370 hospitalized patients, 222 receiving HCQ+AZ and 148 receiving HCQ, showing mortality OR 0.61 [0.23-1.59], *p* = 0.31 for the addition ...		
Aug 4	PrEP	***Bhatt*** *et al., medRxiv, doi:10....*	cases, ↑49.3%, p=0.02	Hydroxychloroquine Prophylaxis against Coronavirus Disease-19: Practice Out...
	Details	Observational study of 927 low-risk healthcare workers in India, 731 volunteering for weekly HCQ prophylaxis, showing higher cases with treatment in u...		

Aug 4	Late	*Alghamdi et al., Saudi Pharm…*	death, ↑39.2%, p=0.52	Clinical characteristics and treatment outcomes of severe (ICU) COVID-19 pati…
	Details	Retrospective 171 ICU patients in Saudi Arabia showing no significant difference for HCQ treatment in unadjusted results.		
Aug 3	Revie…	*Santin et al., New Microbes a…*	review	Ivermectin: a multifaceted drug of Nobel prize-honored distinction with indicat…
	Details	Review concluding that the evidence supports worldwide use of ivermectin for COVID-19, complementary to immunization. Authors note that it is likely …		
Jul 31	Late	*Barra et al., medRxiv, doi:10.…*	death, ↓10.8%, p=1.00	COVID-19 in hospitalized patients in 4 hospitals in San Isidro, Buenos Aires, Ar…
	Details	Retrospective 668 hospitalized patients in Argentina, 18 treated with HCQ, not showing a significant difference in unadjusted results.		
Jul 30	Levels	*Matin et al., Archives of Micr…*	cases, ↓66.1%, p<0.0001	The sufficient vitamin D and albumin level have a protective effect on COVID-1…
	Details	Case control study with 191 COVID-19 patients and 203 healthy controls in Iran, showing an association between vitamin D deficiency and COVID-19 in…		
Jul 30	Late	*Abdelwahab et al., Clinical Dr…*	ventilation, ↑7.8%, p=0.93	Acetylsalicylic Acid Compared with Enoxaparin for the Prevention of Thrombo…
	Details	Retrospective 225 hospitalized patients in Egypt, showing significantly lower thromboembolic events with aspirin treatment, but no significant differenc…		
Jul 29	Meta	*Ghasemian et al., The Interna…*	meta-analysis	The Role of Vitamin D in the Age of COVID-19: A Systematic Review and Meta-…
	Details	Systematic review and meta analysis of 23 studies, finding significantly higher risk of COVID-19 cases and severity with vitamin D deficiency. Mortality …		
Jul 29	Early,…	*Annweiler et al., The Journal …*	death, ↓64.2%, p=0.002	Vitamin D supplementation prior to or during COVID-19 associated with better …
	Details	Report on extended results from the GERIA-COVID study, showing significantly lower mortality at 3 months with vitamin D treatment. Results combine p…		
Jul 29	Early	*Sobngwi et al., medRxiv, doi:…*	no recov., ↓51.6%, p=0.44	Doxycycline is a safe alternative to Hydroxychloroquine + Azithromycin to prev…
	Details	RCT 194 mild/asymptomatic low-risk patients in Cameroon, 97 treated with HCQ+AZ and 97 treated with doxycycline, showing 2.1% symptomatic pati…		
Jul 28	Meta	*Popp et al., Cochrane Databa…*	meta-analysis	Ivermectin for preventing and treating COVID-19
	Details	Outdated very biased retrospective meta analysis cherry-picking a small subset of studies, with a majority of results based on only 1 or 2 studies, showi…		
Jul 27	Levels	*Cozier et al., PLoS ONE, doi:1…*	cases, ↓38.6%, p=0.02	Lower serum 25(OH)D levels associated with higher risk of COVID-19 infection …
	Details	Prospective study of vitamin D levels and COVID-19 infection in the Black Women's Health Study, showing higher risk of infection for lower vitamin D lev…		
Jul 27	PrEP	*Israel et al., Epidemiology an…*	hosp., ↓9.1%, p=0.003	Identification of drugs associated with reduced severity of COVID-19: A case-c…
	Details	Case control study examining medication usage with a healthcare database in Israel, showing lower risk of hospitalization with vitamin D (defined as b…		
Jul 25	Early	*Ontai et al., medRxiv, doi:10.1101/2021.07.21.21260223 (Preprint)*		Early multidrug treatment of SARS-CoV-2 (COVID-19) and decreased case fatal…
	Details	Report on the nationwide implementation of multi-drug COVID-19 inpatient and outpatient treatment protocols in Honduras, showing a case fatality rat…		
Jul 25	Early	*Cadegiani et al., medRxiv, doi:10.1101/2021.07.24.21261047 (Prep…*		Proxalutamide Improves Inflammatory, Immunologic, and Thrombogenic Mark…
	Details	Analysis of data from two proxalutamide early treatment RCTs with 445 patients showing substantial improvements in immunologic, inflammatory, thr…		
Jul 24	News	*World Ivermectin Day (News)*	news	World Ivermectin Day
	Details	Joint event by 22 worldwide organizations.		
Jul 23	Safety	*Mansour et al., International I…*	safety analysis	Safety of inhaled ivermectin as a repurposed direct drug for treatment of COVI…
	Details	Safety analysis of an inhaled lyophilized ivermectin formulation, showing 127-fold increase in drug solubility, and identifying safe dosage levels in rats.		
Jul 23	Late	*Güven et al, European Journ…*	death, ↓24.8%, p=0.32	The effect of high-dose parenteral vitamin D3 on COVID-19-related inhospital …
	Details	Retrospective 175 ICU patients, 113 treated with a single dose of 300,000IU intramuscular cholecalciferol, showing lower mortality with treatment, but n…		
Jul 20	Revie…	*Ramos et al., Antioxidants, d…*	review	The Coronavirus Disease 2019 (COVID-19): Key Emphasis on Melatonin Safety…
	Details	Review of melatonin for COVID-19 discussing mechanisms of action and ongoing trials.		
Jul 20	In Vit…	*Heinen et al., Viruses, doi:10.…*	*in vitro*	Antiviral Effect of Budesonide against SARS-CoV-2
	Details	*In Vitro* study showing dose-dependent inhibition of SARS-CoV-2 with budesonide.		
Jul 19	Late	*Madan et al., medRxiv, doi:1…*	death, ↓44.4%, p=0.03	Remdesivir for the treatment of COVID-19 disease: A retrospective comparative…
	Details	Retrospective 1,262 hospitalized patients, 398 treated with remdesivir, showing unadjusted lower mortality with treatment, and a treatment delay-respo…		
Jul 17	Revie…	*Camp et al., Journal of Inorg…*	review	Melatonin interferes with COVID-19 at several distinct ROS-related steps
	Details	Review discussing how melatonin may improve COVID-19 prognosis by acting to reduce oxygen deficiency and hypoxia, vitamin B12 deficiency, NO de…		
Jul 17	PrEP	*Oristrell et al., Journal of End…*	death, ↑1.0%, p=0.91	Vitamin D supplementation and COVID-19 risk: a population-based, cohort stu…
	Details	Retrospective study of cholecalciferol and calcitriol supplementation in Catalonia showing a small but significant lower risk of cases with cholecalcifer…		
Jul 16	News	*FLCCC Alliance and British Iv…*	news	Joint Statement of the FLCCC Alliance and British Ivermectin Recommendation…
	Details	News release noting that ivermectin remains effective after excluding Elgazzar et al. Given the large magnitude effects and 61 studies, excluding one st…		
Jul 16	News	*Kintor Pharmaceutical News …*	news	Kintor Pharmaceutical Receives Emergency Use Authorization for Proxalutami…
	Details	News release announcing that proxalutamide has been granted an emergency use authorization for COVID-19 in Paraguay.		

We aim to cover the most promising early treatments for COVID-19. We use pre-specified effect extraction criteria that prioritizes more serious outcomes, for details see methods. For specific outcomes and different treatment stages see the individual pages. Not all treatments are covered here, effectiveness has been reported for many other treatments in studies. Of the 840 studies, 579 present results comparing with a control group, 512 are treatment studies, and 67 analyze outcomes based on serum levels. There are 12 animal studies, 21 *in silico* studies, 43 *in vitro* studies, and 53 meta analyses.

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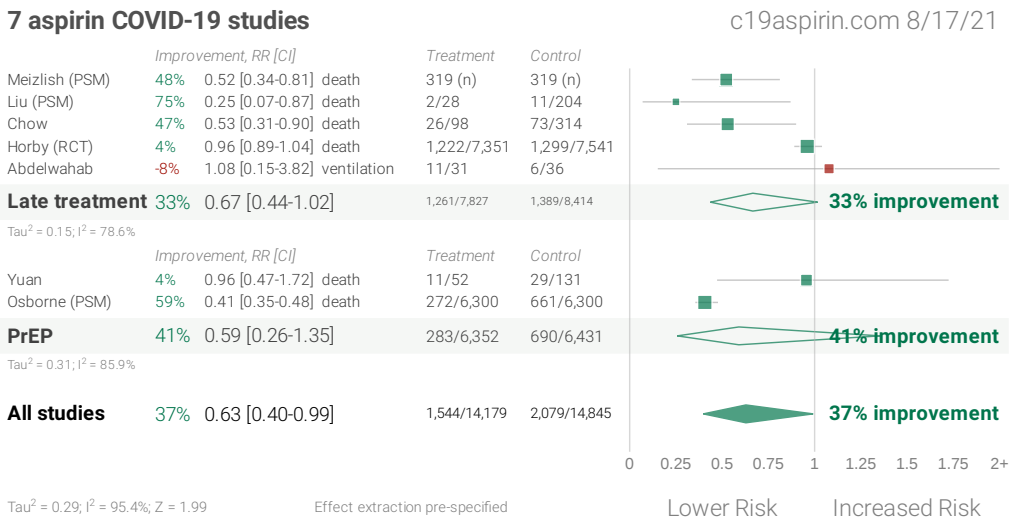

Database of all aspirin COVID-19 studies. Submit updates/corrections.

Jul 30	Late	*Abdelwahab et al., Clinical Dr…*	ventilation, ↑7.8%, p=0.93	Acetylsalicylic Acid Compared with Enoxaparin for the Prevention of Thrombo…
	Details	Retrospective 225 hospitalized patients in Egypt, showing significantly lower thromboembolic events with aspirin treatment, but no significant differenc…		
Jun 8	Late	*Horby et al., medRxiv, doi:10.…*	death, ↓4.0%, p=0.35	Aspirin in patients admitted to hospital with COVID-19 (RECOVERY): a randomi…
	Details	RCT 14,892 very late stage (9 days from symptom onset) hospitalized patients, not showing a significant difference in mortality with treatment. A statis…		
Apr 1	Late	*Chow et al., Anesthesia & An…*	death, ↓47.0%, p=0.02	Aspirin Use Is Associated With Decreased Mechanical Ventilation, Intensive Ca…
	Details	Retrospective 412 hospitalized patients, 98 treated with aspirin, showing lower mortality, ventilation, and ICU admission with treatment.		
Feb 12	Late	*Liu et al., Medicine, doi:10.10…*	death, ↓75.0%, p=0.03	Effect of low-dose aspirin on mortality and viral duration of the hospitalized ad…
	Details	Retrospective PSM analysis of 232 hospitalized patients, 28 treated with aspirin, showing lower mortality with treatment. There was no significant diffe…		
Feb 11	PrEP	*Osborne et al., PloS ONE, doi:…*	death, ↓59.4%, p<0.0001	Association of mortality and aspirin prescription for COVID-19 patients at the V…
	Details	Retrospective PSM analysis of pre-existing aspirin use in the USA, showing lower mortality with treatment.		
Jan 21	Late	*Meizlish et al., American Jou…*	death, ↓47.8%, p=0.004	Intermediate-dose anticoagulation, aspirin, and in-hospital mortality in COVID-…
	Details	Retrospective 638 matched hospitalized patients in the USA, 319 treated with aspirin, showing lower mortality with treatment.		
Dec 18 2020	PrEP	*Yuan et al., Journal of Cellula…*	death, ↓4.4%, p=0.89	Mortality and pre-hospitalization use of low-dose aspirin in COVID-19 patients …
	Details	Retrospective 183 hospitalized patients in China, 52 taking low-dose aspirin prior to hospitalization, showing no significant difference with treatment.		

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7 bamlanivimab COVID-19 studies

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Database of all bamlanivimab COVID-19 studies. Submit updates/corrections.

Jun 23	Early	*Webb et al., Open Forum Infe...*	death, ↓79.7%, p=0.09	Real-World Effectiveness and Tolerability of Monoclonal Antibody Therapy for ...
	Details	Retrospective 479 patients treated with bamlanivimab showing lower mortality, hospital admission, and emergency department visits with treatment. A...		
Mar 30	Late	*Bariola et al., medRxiv, doi:1...*	death, ↓66.8%, p=0.05	Impact of monoclonal antibody treatment on hospitalization and mortality am...
	Details	Retrospective 234 patients receiving bamlanivimab and 234 matched controls, showing lower hospitalization and mortality with treatment. Greater ben...		
Mar 10	Early	*Lilly, Press Release (Preprint)*	death, ↓92.3%, p=0.01	Lilly's bamlanivimab and etesevimab together reduced hospitalizations and de...
	Details	Results from the BLAZE-1 study of combined bamlanivimab/etesevimab, showing significantly lower mortality and combined mortality/hospitalization ...		
Jan 21	PrEP	*Lilly, Press Release (Preprint)*	symp. case, ↓57.0%, p=0.0002	Lilly's neutralizing antibody bamlanivimab (LY-CoV555) prevented COVID-19 at...
	Details	Press release on the BLAZE-2 trial at nursing homes showing significantly lower symptomatic COVID-19 with treatment.		
Jan 21	Early	*Gottlieb et al., JAMA, doi:10....*	hosp./ER, ↓70.6%, p=0.05	Effect of Bamlanivimab as Monotherapy or in Combination With Etesevimab o...
	Details	RCT for LY-CoV555 monotherapy and LY-CoV555/LY-CoV016 combination therapy with 592 patients showing lower hospitalization/ER visits with treat...		
Dec 22 2020	Late	*ACTIV-3/TICO LY-CoV555 stu...*	death, ↑100%, p=0.22	A Neutralizing Monoclonal Antibody for Hospitalized Patients with Covid-19
	Details	Late stage RCT of LY-CoV555 added to remdesivir, showing non-statistically significant higher mortality with the addition of LY-CoV555.		
Oct 28 2020	Early	*Chen et al., NEJM, doi:10.10...*	hosp., ↓74.3%, p=0.02	SARS-CoV-2 Neutralizing Antibody LY-CoV555 in Outpatients with Covid-19
	Details	Interim analysis of the BLAZE-1 phase 2 trial of outpatients showing lower hospitalization or ER visits (1.6% versus 6.3%), and improvements in sympto...		
Oct 26 2020	News	*Lilly, Press Release (News)*	news	Lilly Statement Regarding NIH's ACTIV-3 Clinical Trial
	Details	ACTIV-3 intermin analysis shows LY-CoV555 is unlikely to help hospitalized patients. ACTIV-2, BLAZE-1 and BLAZE-2 trials remain ongoing.		
Oct 7 2020	Early	*Lilly, Press Release (Preprint)*	hosp., ↓84.5%, p=0.05	SARS-CoV-2 neutralizing antibody program update
	Details	Interim results from the BLAZE-1 outpatient RCT showing improvements in viral load, symptoms and hospitalization. Combination therapy significantly...		

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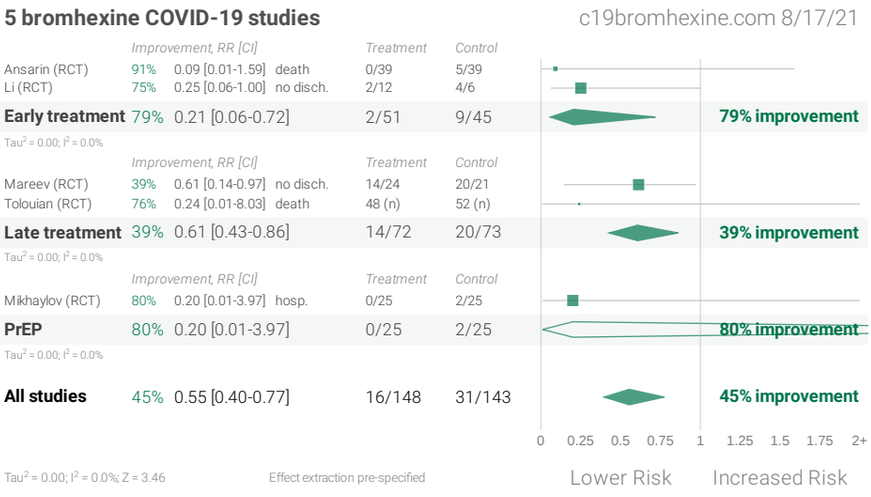

Database of all bromhexine COVID-19 studies. Submit updates/corrections.

Apr 30	In Sili…	*Sgrignani et al., Frontiers in Molecular Biosciences, doi:10.3389/fm…*		Computational Identification of a Putative Allosteric Binding Pocket in TMPRS…
	Details	*In Sllico* study of TMPRSS2 inhibition by camostat, nafamostat, and bromhexine, suggesting allosteric binding for bromhexine, compared to camostat …		
Mar 15	Late	*Tolouian et al., J. Investig. M…*	death, ↓76.0%, p=0.43	Effect of bromhexine in hospitalized patients with COVID-19
	Details	Small RCT with 100 patients, 48 with bromhexine added to SOC, showing slower viral- conversion but lower mortality and greater clinical improvement …		
Mar 8	PrEP	*Mikhaylov et al., medRxiv, do…*	hosp., ↓80.0%, p=0.49	Bromhexine Hydrochloride Prophylaxis of COVID-19 for Medical Personnel: A R…
	Details	Small prophylaxis RCT with 25 treatment and 25 control health care worker, showing lower PCR+, symptomatic cases, and hospitalization with treatme…		
Jan 31	In Vit…	*Carpinteiro et al., Journal of …*	*in vitro*	Inhibition of acid sphingomyelinase by ambroxol prevents SARS-CoV-2 entry i…
	Details	*In Vitro* study showing that ambroxol (a metabolite of bromhexine) inhibits SARS-CoV-2 infection.		
Dec 31 2020	Revie…	*Al-Kuraishy et al., Current Me…*	review	The potential role of Bromhexine in the management of COVID-19: Decipher an…
	Details	Review article noting that bromhexine is a TMPRSS2 inhibitor with greater effect in lung tissue and attenuates the entry and proliferation of SARS-CoV-2.		
Dec 3 2020	Late	*Mareev et al., Кардиология, …*	no disch., ↓38.8%, p=0.02	Results of Open-Label non-Randomized Comparative Clinical Trial: "BromhexIn…
	Details	Prospective 103 PCR+ patients in Russia, 33 treated with bromexhine+spironolactone. The odds ratio of having a positive PCR or hospitalization for ≥1…		
Sep 3 2020	Early	*Li et al., Clinical and Translati…*	no disch., ↓75.0%, p=0.11	Bromhexine Hydrochloride Tablets for the Treatment of Moderate COVID-19: A…
	Details	Tiny RCT with 12 bromhexine and 6 control patients showing non-statistically significant improvements in chest CT, need for oxygen therapy, and disc…		
Jul 19 2020	Early	*Ansarin et al., Bioimpacts, do…*	death, ↓90.9%, p=0.05	Effect of bromhexine on clinical outcomes and mortality in COVID-19 patients: …
	Details	RCT with 39 bromhexine and 39 control patients showing lower mortality, intubation, and ICU admission with treatment. The treatment group received …		
May 26 2020	Theo…	*Depfenhart et al., Internal and…*	theory	Potential new treatment strategies for COVID-19: is there a role for bromhexine …
	Details	Proposal to use bromhexine to inhibit TMPRSS2-specific viral entry for prophylaxis and treatment of COVID-19.		
Apr 30 2020	Theo…	*Habtemariam et al., Pharmac…*	theory	Possible use of the mucolytic drug, bromhexine hydrochloride, as a prophylacti…
	Details	Note on the potential use of bromhexine hydrochloride for prophylaxis of SARS-CoV-2, based on the role of TMPRSS2 in SARS-CoV-2 infection, and the …		
Apr 22 2020	Revie…	*Maggio et al., Pharmacol Res…*	review	Repurposing the mucolytic cough suppressant and TMPRSS2 protease inhibit…
	Details	Proposal to use bromhexine for prophylaxis and treatment of COVID-19 based on TMPRSS2 inhibition, widespread clinical use, and supporting pharma…		

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2 budesonide COVID-19 studies

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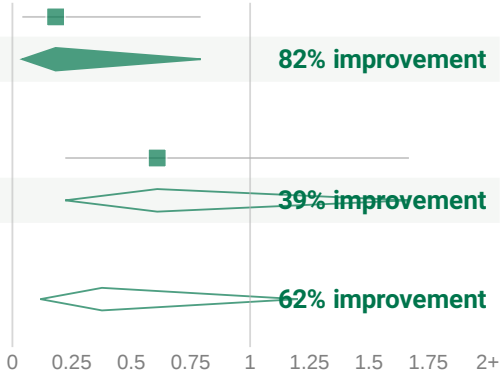
	Improvement	RR [CI]		Treatment	Control
Ramakrishnan (RCT)	82%	0.18 [0.04-0.79]	hosp./ER	2/73	11/73
Early treatment	82%	0.18 [0.04-0.79]		2/73	11/73
$Tau^2 = 0.00$; $I^2 = 0.0\%$					
	Improvement	RR [CI]		Treatment	Control
Yu (RCT)	39%	0.61 [0.22-1.67]	death	6/787	10/799
Late treatment	39%	0.61 [0.22-1.67]		6/787	10/799
$Tau^2 = 0.00$; $I^2 = 0.0\%$					
All studies	62%	0.38 [0.12-1.20]		8/860	21/872



$Tau^2 = 0.32$; $I^2 = 43.4\%$; $Z = 1.65$ Effect extraction pre-specified

Lower Risk Increased Risk

Database of all budesonide COVID-19 studies. Submit updates/corrections.

Jul 20	In Vit...	*Heinen et al., Viruses, doi:10....*	*in vitro*	Antiviral Effect of Budesonide against SARS-CoV-2
	Details	*In Vitro* study showing dose-dependent inhibition of SARS-CoV-2 with budesonide.		
May 5	In Vit...	*Konduri et al., bioRxiv, doi:10...*	*in vitro*	ProLung™-budesonide Inhibits SARS-CoV-2 Replication and Reduces Lung Infl...
	Details	*In Vitro* study and animal study showing that ProLung™-budesonide inhibits SARS-CoV-2 replication (results for budesonide were not provided). ProLun...		
Apr 12	Late	*Yu et al., The Lancet, doi:10.1...*	death, ↓39.1%, p=0.45	Inhaled budesonide for COVID-19 in people at higher risk of adverse outcomes ...
	Details	Interim results from the PRINCIPLE trial, 1,073 treated with budesonide starting a median of 6 days after symptom onset, showing lower hospitalization...		
Feb 8	Early	*Ramakrishnan et al., Lancet ...*	hosp./ER, ↓81.8%, p=0.02	Inhaled budesonide in the treatment of early COVID-19 (STOIC): a phase 2, ope...
	Details	RCT with 73 budesonide patients and 73 control patients, showing significantly lower combined risk of an ER visit or hospitalization, and lower risk of n...		

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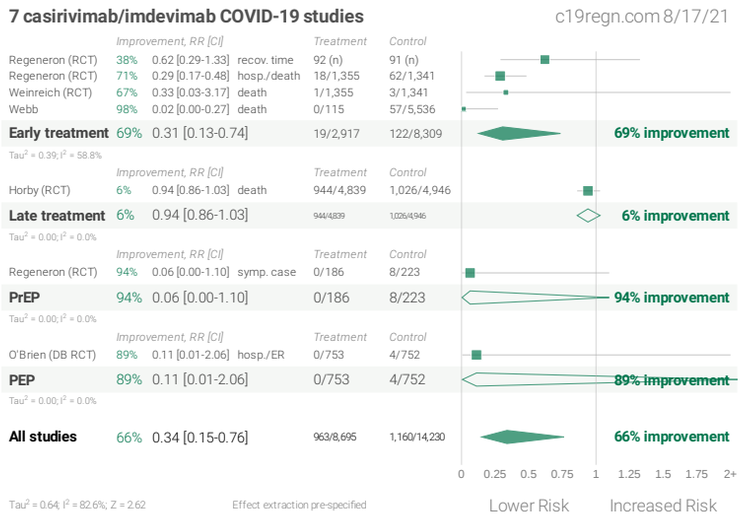

Database of all casirivimab/imdevimab COVID-19 studies. Submit updates/corrections.

Jun 23	Early	*Webb et al., Open Forum Infe…*	death, ↓98.3%, p=0.63	Real-World Effectiveness and Tolerability of Monoclonal Antibody Therapy for …
	Details	Retrospective 115 patients treated with casirivimab/imdevimab showing lower mortality, hospital admission, and emergency department visits with tre…		
Jun 16	Late	*Horby et al., medRxiv, doi:10.…*	death, ↓6.0%, p=0.17	Casirivimab and imdevimab in patients admitted to hospital with COVID-19 (R…
	Details	RCT 9,785 hospitalized patients in the UK showing lower mortality with casirivimab/imdevimab, with statistical significance reached for baseline seron…		
May 21	Early	*Weinreich et al., medRxiv, doi…*	death, ↓67.0%, p=0.37	REGEN-COV Antibody Cocktail Clinical Outcomes Study in Covid-19 Outpatients
	Details	RCT 4,057 outpatients with >=1 risk factor for severe disease, showing significantly lower combined hospitalization/death, and significantly faster reco…		
Apr 12	PEP	*O'Brien et al., NEJM, doi:10.1…*	hosp./ER, ↓88.9%, p=0.06	Subcutaneous REGEN-COV Antibody Combination to Prevent Covid-19
	Details	Prophylaxis trial reporting lower hospitalization/ER and symptomatic cases, and faster recovery with 1,200mg subcutaneous casirivimab with imdevim…		
Mar 23	Early	*Regeneron Press Release (Pr…*	hosp./death, ↓71.3%, p<0.0001	New phase III data shows investigational antibody cocktail casirivimab and im…
	Details	Press release for new phase III data showing lower hospitalization/mortality, and faster symptom resolution among the subset of patients with at least …		
Jan 26	PrEP	*Regeneron Press Release (Pr…*	symp. case, ↓93.6%, p=0.009	Regeneron Reports Positive Interim Data with REGEN-COV™ Antibody Cocktail …
	Details	Interim results of REGEN-COV prophylaxis showing 100% prevention of symptomatic infection (8/223 placebo vs. 0/186 REGEN-COV), and approximat…		
Sep 29 2020	Early	*Regeneron Press Release (Pr…*	recov. time, ↓38.0%, p=0.22	Regeneron's REGN-COV2 antibody cocktail reduced viral levels and improved s…
	Details	Analysis of the first 275 patients in a trial of the REGN-COV2 antibody cocktail showing reductions in viral load and the time to alleviate symptoms in n…		
Aug 21 2020	In Vit…	*Baum et al., Science, 21 Aug …*	*in vitro*	Antibody cocktail to SARS-CoV-2 spike protein prevents rapid mutational esca…
	Details	*In Vitro* study showing that, under pressure from individual antibodies, mutant viruses were rapidly selected that evaded the blocking function of all indi…		
Aug 21 2020	Anim…	*Hansen et al., Science, 21 Au…*	animal study	Studies in humanized mice and convalescent humans yield a SARS-CoV-2 anti…
	Details	Study using humanized mice and blood samples from recovered COVID-19 patients to generate antibodies targeting multiple different regions of the cri…		

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10 colchicine COVID-19 studies

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[1] CT: study uses combined treatment
Tau² = 0.17; I² = 74.5%; Z = 2.82

Effect extraction pre-specified

Database of all colchicine COVID-19 studies. Submit updates/corrections.

Jul 10	Late	*Gaitán-Duarte* et al., medRxiv...	death, ↓19.0%, p=0.43	Effectiveness of Rosuvastatin plus Colchicine, Emtricitabine/Tenofovir and a c...
	Details	RCT 633 hospitalized patients in Colombia, 153 treated with colchicine + rosuvastatin, not showing statistically significant differences in outcomes. Im...		
May 18	Late	*Horby* et al., medRxiv, doi:10....	death, ↑1.0%, p=0.77	Colchicine in patients admitted to hospital with COVID-19 (RECOVERY): a rand...
	Details	RCT with 5,610 colchicine and 5,730 control patients showing mortality RR 1.01 [0.93-1.10]. Very late stage treatment, mean 9 days after symptom ons...		
Mar 14	Meta	*Hariyanto* et al., Clinical and ...	meta-analysis	Colchicine treatment can improve outcomes of coronavirus disease 2019 (CO...
	Details	Meta analysis concluding that colchicine can reduce severity and mortality in COVID-19 patients, mortality OR 0.43 [0.32-0.58].		
Jan 27	Late	*Tardif* et al., The Lancet Respi...	death, ↓43.9%, p=0.30	Efficacy of Colchicine in Non-Hospitalized Patients with COVID-19Colchicine fo...
	Details	RCT for relatively low risk outpatients, 2235 treated with colchicine a mean of 5.3 days after the onset of symptoms, and 2253 controls, showing lower ...		
Nov 5 2020	Late	*Rodriguez-Nava* et al., Mayo ...	death, ↓5.5%, p=0.87	Clinical characteristics and risk factors for mortality of hospitalized patients wi...
	Details	Retrospective 313 patients, mostly critical stage and mostly requiring respiratory support. Confounding by indication likely.		
Oct 27 2020	Late	*Sandhu* et al., Canadian Jour...	death, ↓41.7%, p=0.0006	A Case Control Study to Evaluate the Impact of Colchicine on Patients Admitte...
	Details	Prospective cohort study of hospitalized patients in the USA, 34 treated with colchicine, showing lower mortality and intubation with treatment.		
Oct 23 2020	Late	*Pinzón* et al., Research Squar...	death, ↓34.5%, p=0.18	Clinical Outcome of Patients with COVID-19 Pneumonia Treated with Corticost...
	Details	Retrospective 301 pneumonia patients in Colombia showing lower mortality with colchicine treatment.		
Sep 14 2020	Late	*Scarsi* et al., Annals of the Rh...	death, ↓84.9%, p<0.0001	Association between treatment with colchicine and improved survival in a sing...
	Details	Retrospective 122 colchicine patients and 140 control patients in Italy, showing lower mortality with treatment.		
Sep 14 2020	Late	*Brunetti* et al., J. Clin. Med., 9...	death, ↓72.7%, p=0.03	Colchicine to Weather the Cytokine Storm in Hospitalized Patients with COVID-...
	Details	PSM matched analysis from consecutive hospitalized patients, with 33 colchicine and 33 control matched patients, showing lower mortality with treat...		
Aug 12 2020	Late	*Lopes* et al., RMD Open, doi:1...	death, ↓80.0%, p=0.49	Beneficial effects of colchicine for moderate to severe COVID-19: a randomised...
	Details	RCT with 36 colchicine and 36 control patients, showing reduced length of hospitalization and oxygen therapy with treatment.		
Jun 24 2020	Late	*Deftereos* et al., JAMA Netwo...	death, ↓77.3%, p=0.19	Effect of Colchicine vs Standard Care on Cardiac and Inflammatory Biomarker...
	Details	RCT with 55 patients treated with colchicine and 50 control patients, showing lower mortality and ventilation with treatment. NCT04326790.		

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4 curcumin COVID-19 studies

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Database of all curcumin COVID-19 studies. Submit updates/corrections.

Jul 9	Early	*Panda et al., Medicine, doi:10.1097/MD.0000000000026601 (Peer ...*		The enhanced bioavailability of free curcumin and bioactive-metabolite tetrah...
	Details	Bioavailability RCT comparing CURCUGEN, a 50% curcuminoids-concentrated turmeric extract, with curcuminoids 95% standardized extract (C-95), sho...		
Jun 29	In Vit...	*Guijarro-Real et al., Foods, d...*	*in vitro*	Potential In Vitro Inhibition of Selected Plant Extracts against SARS-CoV-2 Chy...
	Details	*In Vitro* study of several plant extracts, showing strong inhibition of SARS-CoV-2 3CLPro activity by turmeric rhizomes. Commercial curcumin also inhibi...		
Jun 19	Early	*Ahmadi et al., Food Science ...*	hosp., ↓85.7%, p=0.24	Oral nano-curcumin formulation efficacy in the management of mild to moder...
	Details	RCT 60 outpatients in Iran, 30 treated with nano-curcumin showing lower hospitalization and faster recovery with treatment.		
May 28	Early	*Pawar et al., Frontiers in Pha...*	death, ↓81.8%, p=0.02	Oral Curcumin With Piperine as Adjuvant Therapy for the Treatment of COVID-...
	Details	RCT 140 patients, 70 treated with curcumin and piperine (for absorption), showing faster recovery, lower progression, and lower mortality with treatmen...		
May 7	Revie...	*Rattis et al., Frontiers in Phar...*	review	Curcumin as a Potential Treatment for COVID-19
	Details	Review of curcumin for COVID-19 including potential antiviral, anti-inflammatory, anticoagulant, antiplatelet, and cytoprotective effects.		
Jan 3	Early	*Saber-Moghaddam et al., Ph...*	progression, ↓94.3%, p=0.001	Oral nano-curcumin formulation efficacy in management of mild to moderate ...
	Details	Small prospective nonrandomized trial with 41 patients, 21 treated with curcumin, showing lower disease progression and faster recovery with treatme...		
Oct 20 2020	Late	*Valizadeh et al., Int. Immuno...*	death, ↓50.0%, p=0.30	Nano-curcumin therapy, a promising method in modulating inflammatory cyto...
	Details	Small RCT with 40 nano-curcumin patients and 40 control patients showing lower mortality with treatment. Authors conclude that nano-curcumin may ...		

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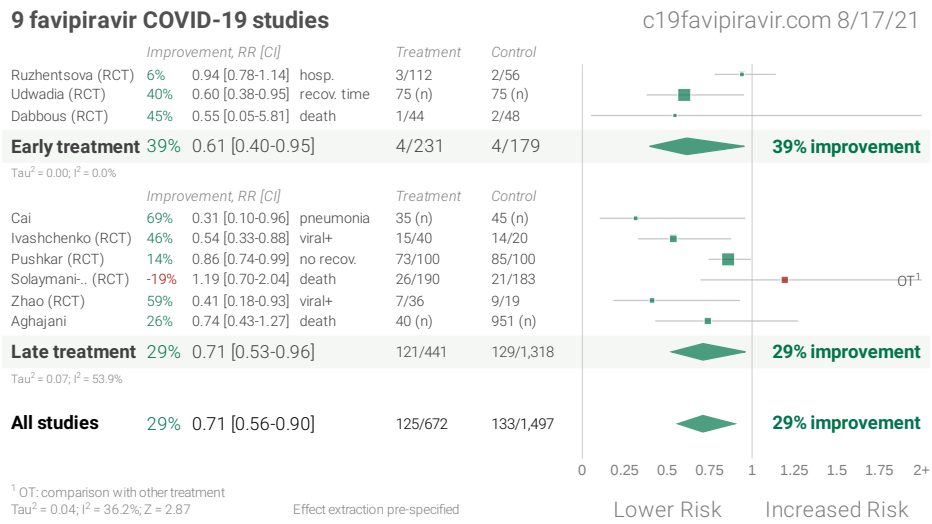

Database of all favipiravir COVID-19 studies. Submit updates/corrections.

Search: Restrict: **All** Early Late

Apr 29	Late	*Aghajani et al., Journal of M…*	death, ↓26.1%, p=0.28	Decreased In-Hospital Mortality Associated with Aspirin Administration in Hos…
	Details	Retrospective 991 hospitalized patients in Iran focusing on aspirin use but also showing results for HCQ, remdesivir, and favipiravir.		
Apr 21	Late	*Zhao et al., International Imm…*	viral+, ↓59.0%, p=0.06	Favipiravir in the treatment of patients with SARS-CoV-2 RNA recurrent positive…
	Details	RCT with 55 patients (36 favipiravir, 19 control) who were PCR+ after recovery, showing improved viral clearance with treatment.		
Apr 19	Late	*Favipiravir Observational Study Group, Fujita Health University (Pre…*		Favipiravir Observational Study Interim Report 3
	Details	Retrospective analysis of favipiravir use in 10,986 hospitalized patients, including analysis of changes in clinical status and side effects. Common adve…		
Apr 17	Early	*Fujii et al., Journal of Infection and Chemotherapy, doi:10.1016/j.jia…*		Early favipiravir treatment was associated with early defervescence in non-sev…
	Details	Retrospective 41 favipiravir patients finding that early treatment was more successful.		
Mar 11	Late	*Solaymani-Dodaran et al., Int…*	death, ↑19.2%, p=0.54	Safety and efficacy of Favipiravir in moderate to severe SARS-CoV-2 pneumonia
	Details	RCT late stage patients (median SpO_2 89), 193 treated with favipiravir, 187 with lopinavir/ritonavir, showing no significant differences in mortality, intub…		
Mar 8	Late	*Fateh et al., medRxiv, doi:10.1101/2021.03.05.21251351 (Preprint)*		A single-center retrospective cohort study of Covid-19 medications: Remdesivir…
	Details	Retrospective 324 hospitalized patients in Iran reporting on the use Remdesivir, Favipiravir, Methylprednisolone, Dexamethasone, and Interferon β1a an…		
Feb 4	Early,…	*Uçan et al., Research Square, doi:10.21203/rs.3.rs-175340/v1 (Prep…*		Benefits of Treatment With Favipiravir in Hospitalized Patients for COVID-19: a …
	Details	Retrospective 144 COVID-19 patients in Turkey, one group receiving FPV after a mean of 4.7 days, a second group after a mean of 8.6 days, and all grou…		
Jan 25	Early	*Dabbous et al., Archives of Vi…*	death, ↓45.5%, p=0.12	Efficacy of favipiravir in COVID-19 treatment: a multi-center randomized study
	Details	RCT with 44 favipiravir patients and 48 CQ patients, showing non-statistically significant lower mortality, ventilation, and hospitalization time with favi…		
Jan 14	Early	*Karatas et al., Research Square, doi:10.21203/rs.3.rs-142868/v1 (Pr…*		Early Onset Favipiravir Saves Lives
	Details	Retrospective 180 hospitalized patients showing lower mortality when Favipiravir is given earlier. 17% of patients given Favipiravir within 3 days died, c…		
Nov 17 2020	Late	*Doi et al., Antimicrobial Agents and Chemotherapy, doi:10.1128/AA…*		A Prospective, Randomized, Open-Label Trial of Early versus Late Favipiravir T…
	Details	Small RCT comparing late and very late (7 and 14 days from fever onset) favipiravir. Viral clearance was non-statistically significantly improved with rel…		
Nov 16 2020	Early	*Udwadia et al., International …*	recov. time, ↓40.0%, p=0.03	Efficacy and Safety of Favipiravir, an Oral RNA-Dependent RNA Polymerase Inh…
	Details	RCT with 75 favipiravir patients and 75 control patients showing reduced time to clinical cure and reduced time of viral shedding.		
Nov 9 2020	Late	*Khamis et al., International Journal of Infectious Diseases, doi:10.10…*		Randomized Controlled Open Label Trial on the Use of Favipiravir Combined w…
	Details	Small 89 patient RCT comparing favipiravir and inhaled interferon with HCQ for moderate to severe COVID-19 pneumonia, not finding significant differe…		
Nov 5 2020	Late	*Pushkar et al., NCT0454269…*	no recov., ↓14.1%, p=0.06	Study of Favipiravir Compared to Standard of Care in Hospitalized Patients Wit…
	Details	RCT 200 patients showing improvements in clinical recovery and viral clearance with favipiravir. There is no paper available but results are posted in cli…		
Oct 26 2020	Early	*Ruzhentsova et al., SSRN, do…*	hosp., ↓6.0%, p=0.49	Phase 3 Trial of Coronavir (Favipiravir) in Patients with Mild to Moderate COVI…
	Details	RCT 168 patients, 112 receiving favipiravir and 56 SOC, showing shorter time to clinical improvement and faster viral clearance with favipiravir.		
Sep 30 2020	Late	*Zhaao et al., Biomedicine & Pharmacotherapy, doi:10.1016/j.biopha.…*		Tocilizumab combined with favipiravir in the treatment of COVID-19: A multice…
	Details	Small study with 14 combined favipiravir/tocilizumab, 7 favipiravir, and 5 tocilizumab patients suggesting that tocilizumab combined with or without f…		
Aug 9 2020	Late	*Ivashchenko et al., Clin. Infec…*	viral+, ↓46.4%, p=0.03	AVIFAVIR for Treatment of Patients with Moderate COVID-19: Interim Results of…
	Details	Intermin results for a small RCT with 40 favipiravir and 20 control patients showing faster viral clearance with favipiravir. There is limited data in this re…		
Mar 18 2020	Late	*Cai et al., Engineering, doi:10…*	pneumonia, ↓68.7%, p=0.04	Experimental Treatment with Favipiravir for COVID-19: An Open-Label Control …
	Details	Comparison of 35 FPV patients and 35 LPV/RTV patients, showing significant improvements in chest CT and faster viral clearance with FPV.		

Please send us corrections, updates, or comments. *Vaccines and treatments are both extremely valuable and complementary. All practical, effective, and safe means should be used. Elimination of COVID-19 is a race against viral evolution. No treatment, vaccine, or intervention is 100% available and effective for all current and future variants. Denying the efficacy of any method increases the risk of COVID-19 becoming endemic; and increases mortality, morbidity, and collateral damage. We do not provide medical advice. Before taking any medication, consult a qualified physician who can provide personalized advice and details of risks and benefits based on your medical history and situation. Treatment protocols for physicians are available from the FLCCC.*

Feedback

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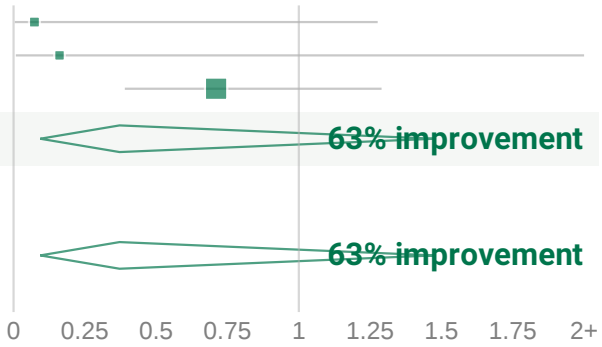
3 fluvoxamine COVID-19 studies

c19fluvoxamine.com 8/17/21

	Improvement, RR [CI]			Treatment	Control
Lenze (DB RCT)	93%	0.07 [0.00-1.28]	progression	0/80	6/72
Seftel (QR)	84%	0.16 [0.01-3.29]	death/ICU	0/77	2/48
Together.. (DB RCT)	29%	0.71 [0.39-1.29]	death	17/742	24/738
Early treatment	63%	0.37 [0.09-1.48]		17/899	32/858
All studies	63%	0.37 [0.09-1.48]		17/899	32/858



$Tau^2 = 0.65$; $I^2 = 35.5\%$

$Tau^2 = 0.65$; $I^2 = 35.5\%$; $Z = 1.41$

Effect extraction pre-specified

Lower Risk Increased Risk

Database of all fluvoxamine COVID-19 studies. Submit updates/corrections.

Aug 12	Revie...	*Hoertel et al., Molecular Psyc...*	review	Repurposing antidepressants inhibiting the sphingomyelinase acid/ceramide s...
	Details	Review of the mechanisms of action and clinical studies for the treatment of COVID-19 with FIASMA antidepressants such as fluoxetine, fluvoxamine, p...		
Aug 6	Early	*Together Trial (News)*	death, ↓29.0%, p=0.26	Early Treatment of COVID-19 with Repurposed Therapies: The TOGETHER Ada...
	Details	Preliminary report from the Together Trial showing mortality RR 0.71 [0.44-1.52]. Treatment delay is currently unknown, however the protocol allows ver...		
Apr 20	Revie...	*Sukhatme et al., Front. Phar...*	review	Fluvoxamine: A Review of Its Mechanism of Action and Its Role in COVID-19
	Details	Review of mechanisms of action of fluvoxamine and other SSRIs that could be beneficial for COVID-19 treatment, including lower platelet aggregation, ...		
Mar 6	Revie...	*Kirsch, S. (Review) (Preprint)*	review	COVID FAQ
	Details	COVID FAQ from the founder of the COVID-19 Early Treatment Fund [1], including an extensive analysis of the fluvoxamine trials and other supporting e...		
Feb 1	Early	*Seftel et al., Open Forum Infe...*	death/ICU, ↓83.9%, p=0.15	Prospective cohort of fluvoxamine for early treatment of COVID-19
	Details	Prospective quasi-randomized (patient choice) study with 125 outpatients, 77 treated with fluvoxamine, showing lower death/ICU admission (0 of 77 v...		
Nov 12 2020	Early	*Lenze et al., JAMA, doi:10.10...*	progression, ↓92.7%, p=0.009	Fluvoxamine vs Placebo and Clinical Deterioration in Outpatients With Sympto...
	Details	RCT 152 outpatients, 80 treated with fluvoxamine showing lower progression with treatment (0 of 80 versus 6 of 72 control).		
Aug 17 2020	Late	*Hoertel et al., Molecular Psychiatry, doi:10.1038/s41380-021-01021...*		Association between antidepressant use and reduced risk of intubation or deat...
	Details	Retrospective 7,230 hospitalized COVID-19 patients in France, 345 receiving an antidepressant medication within 48 hours of admission. There was a s...		

Please send us corrections, updates, or comments. *Vaccines and treatments are both extremely valuable and complementary. All practical, effective, and safe means should be used. Elimination of COVID-19 is a race against viral evolution. No treatment, vaccine, or intervention is 100% available and effective for all current and future variants. Denying the efficacy of any method increases the risk of COVID-19 becoming endemic; and increases mortality, morbidity, and collateral damage. We do not provide medical advice. Before taking any medication, consult a qualified physician who can provide personalized advice and details of risks and benefits based on your medical history and situation. Treatment protocols for physicians are available from the FLCCC.*

Feedback

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HCQ FOR COVID-19

277 TRIALS, 4,529 SCIENTISTS, 396,701 PATIENTS

65% IMPROVEMENT IN 30 EARLY TREATMENT TRIALS RR 0.35 [0.28-0.45]

75% IMPROVEMENT IN 13 EARLY TREATMENT MORTALITY RESULTS RR 0.25 [0.16-0.40]

48% IMPROVEMENT IN 7 EARLY TREATMENT RCT RESULTS RR 0.52 [0.33-0.81]

22% IMPROVEMENT IN 189 LATE TREATMENT TRIALS RR 0.78 [0.73-0.84]

23% IMPROVEMENT IN 42 RANDOMIZED CONTROLLED TRIALS RR 0.77 [0.64-0.93]

SUMMARY OF RESULTS REPORTED IN HCQ STUDIES FOR COVID-19. 08/17/21. HCQMETA.COM

Database of all HCQ COVID-19 studies. 340 studies, 248 peer reviewed, 277 comparing treatment and control groups. HCQ is not effective when used very late with high dosages over a long period (RECOVERY/SOLIDARITY), effectiveness improves with earlier usage and improved dosing. Early treatment consistently shows positive effects. Negative evaluations typically ignore treatment time, often focusing on a subset of late stage studies. *In Vitro* evidence made some believe that therapeutic levels would not be attained, however that was incorrect, e.g. see *[Ruiz]*. Submit updates/corrections.

Search: Restrict: **All** Early Late PrEP PEP

Aug 17	Early,...	*Covid Analysis (Preprint) (me...*	meta-analysis v137	HCQ for COVID-19: real-time meta analysis of 277 studies
	Details	• 100% of the 30 early treatment studies report a positive effect (13 statistically significant in isolation). • Meta analysis using the most serious outcom...		
Aug 10	PEP	*Shabani et al., Pulmonary Ph...*	symp. case, ↓19.0%, p=1.00	Evaluation of the Prophylactic Effect of Hydroxychloroquine on People in Close...
	Details	Small PEP trial with 51 HCQ patients, not showing a significant difference in cases. IRCT20130917014693N10.		
Aug 5	Meta	*Stricker et al., Journal of Infe...*	death, ↓75.0%, p<0.0001	Hydroxychloroquine Pre-Exposure Prophylaxis for COVID-19 in Healthcare Wor...
	Details	Meta analysis of 11 HCQ PrEP studies in India covering 7,616 healthcare workers, showing significantly lower cases with treatment.		
Aug 4	Late	*Özuygur Ermiş et al., Turkish Journal of Medical Sciences, doi:10.39...*		The Efficacy of Hydroxychloroquine and Azithromycin Combination Therapy o...
	Details	Retrospective 370 hospitalized patients, 222 receiving HCQ+AZ and 148 receiving HCQ, showing mortality OR 0.61 [0.23-1.59], *p* = 0.31 for the addition ...		
Aug 4	PrEP	*Bhatt et al., medRxiv, doi:10....*	cases, ↑49.3%, p=0.02	Hydroxychloroquine Prophylaxis against Coronavirus Disease-19: Practice Out...
	Details	Observational study of 927 low-risk healthcare workers in India, 731 volunteering for weekly HCQ prophylaxis, showing higher cases with treatment in u...		
Aug 4	Late	*Alghamdi et al., Saudi Pharm...*	death, ↑39.2%, p=0.52	Clinical characteristics and treatment outcomes of severe (ICU) COVID-19 pati...
	Details	Retrospective 171 ICU patients in Saudi Arabia showing no significant difference for HCQ treatment in unadjusted results.		
Jul 31	Late	*Barra et al., medRxiv, doi:10....*	death, ↓10.8%, p=1.00	COVID-19 in hospitalized patients in 4 hospitals in San Isidro, Buenos Aires, Ar...
	Details	Retrospective 668 hospitalized patients in Argentina, 18 treated with HCQ, not showing a significant difference in unadjusted results.		
Jul 29	Early	*Sobngwi et al., medRxiv, doi:...*	no recov., ↓51.6%, p=0.44	Doxycycline is a safe alternative to Hydroxychloroquine + Azithromycin to prev...
	Details	RCT 194 mild/asymptomatic low-risk patients in Cameroon, 97 treated with HCQ+AZ and 97 treated with doxycycline, showing 2.1% symptomatic pati...		
Jul 13	Late	*Barrat-Due et al., Annals of In...*	death, ↑120.0%, p=0.35	Evaluation of the Effects of Remdesivir and Hydroxychloroquine on Viral Clear...
	Details	Small RCT in Norway with 52 HCQ and 42 remdesivir patients, showing no significant differences with treatment. Add-on trial to WHO Solidarity. NCT04...		
Jul 10	Late	*Roger et al., Anaesthesia Criti...*	death, 0.0%, p=0.94	French Multicentre Observational Study on SARS-CoV-2 infections Intensive ca...
	Details	Prospective study of 966 ICU patients in France, 289 treated with HCQ, showing no significant difference with treatment. Time based confounding is lik...		
Jul 6	Late	*Jacobs et al., The Annals of ...*	death, ↓6.6%, p=0.74	Multi-institutional Analysis of 200 COVID-19 Patients treated with ECMO:Outco...
	Details	Prospective study of 200 ECMO patients showing no significant difference in unadjusted results for HCQ treatment. Time based confounding is likely b...		
Jun 30	Late	*Taieb et al., J. Clin. Med. 202...*	no disch., ↓38.7%, p=0.02	Hydroxychloroquine and Azithromycin Treatment of Hospitalized Patients Infe...
	Details	Retrospective 926 patients in Senegal, 674 treated with HCQ+AZ, showing significantly higher hospital discharge at day 15 with treatment.		
Jun 24	Late	*Gerlovin et al., American Jou...*	death, ↑22.0%, p=0.18	Pharmacoepidemiology, Machine Learning and COVID-19: An intent-to-treat an...
	Details	Retrospective 1,769 hospitalized patients in the USA showing no significant differences for HCQ, and higher intubation for HCQ+AZ.		
Jun 21	In Sili...	*Yadav et al., Research Square, doi:10.21203/rs.3.rs-628277/v1 (Pre...*		Repurposing the Combination Drug of Favipiravir, Hydroxychloroquine and Ose...
	Details	*In Silico* study showing stronger inhibition of SAR-CoV-2 for HCQ+favipiravir+oseltamivir compared to any of these alone or combinations of two of the...		
Jun 18	Late	*Schwartz et al., CMAJ Open, ...*	ICU, ↑133.3%, p=1.00	Assessing the efficacy and safety of hydroxychloroquine as outpatient treatme...
	Details	Small early terminated late treatment RCT not showing significant differences. The HCQ group was a median of 7 days from symptom onset at baselin...		

Jun 18	In Vit…	*Purwati et al., PLOS One, doi:…*	*in vitro*	An in vitro study of dual drug combinations of anti-viral agents, antibiotics, an…
	Details	*In Vitro* study of combinations of drugs showing antiviral efficacy of HCQ alone and in combination with AZ, favipiravir, and doxycycline. No high levels …		
Jun 11	Late	*Turrini et al., Vaccines, 10.33…*	death, ↓9.8%, p=0.15	Clinical Course and Risk Factors for In-Hospital Mortality of 205 Patients with …
	Details	Retrospective 205 patients in Italy, 160 treated with HCQ, showing lower mortality with treatment in multivariate analysis, but not reaching statistical si…		
Jun 9	Late	*Saib et al., PLOS ONE, doi:10.…*	int./death, ↑125.0%, p=0.23	Lack of efficacy of hydroxychloroquine and azithromycin in patients hospitaliz…
	Details	203 hospitalized patients in France, not showing significant differences with treatment. Confounding by indication is likely. Authors do not discuss conf…		
Jun 8	Late	*Singh et al., medRxiv, doi:0.1…*	death, ↓47.5%, p=0.45	Safety and efficacy of antiviral therapy alone or in combination in COVID-19 - a…
	Details	Very small early terminated RCT in India, showing lower mortality but without statistical significance with the very small sample size. Time since sympt…		
Jun 7	PrEP	*Badyal et al., Journal of the A…*	cases, ↓60.1%, p<0.0001	Hydroxychloroquine for SARS CoV2 Prophylaxis in Healthcare Workers – A Mul…
	Details	Prophylaxis study with 12,089 Indian healthcare workers, showing lower risk of COVID-19 cases with treatment, and increasingly lower risk for longer d…		
Jun 4	Late	*Lagier et al., Preprint (Preprint)*	death, ↓32.0%, p=0.004	Outcomes of 2,111 COVID-19 hospitalised patients treated with 2 hydroxychlor…
	Details	Retrospective 2,011 hospitalized patients in France, median age 67, showing lower mortality with HCQ+AZ, and further benefit with the addition of zinc.		
Jun 4	Late	*Byakika-Kibwika et al., Resea…*	recov. time, 0.0%, p=0.91	Safety and Efficacy of Hydroxychloroquine for Treatment of Non-Severe COVID-…
	Details	Small 105 patient RCT in Uganda showing no significant differences. No mortality was reported. The patients were very young (median age 32), recover…		
Jun 3	Late	*Sivapalan et al., European Re…*	death, ↓92.0%, p=0.32	Azithromycin and hydroxychloroquine in hospitalised patients with confirmed …
	Details	Early terminated late stage (8 days from onset, 59% on oxygen) RCT not showing statistically significant differences. NCT04322396 ProPAC-COVID. NN…		
Jun 1	PrEP	*Korkmaz et al., Authorea, doi:…*	death, ↓82.1%, p=0.19	The effect of Hydroxychloroquine use due to rheumatic disease on the risk of C…
	Details	Retrospective 683 patients in a rheumatology department, 384 chronic HCQ users and 299 control patients, showing no mortality for HCQ users vs. 2 d…		
Jun 1	PrEP	*Kamstrup et al., International…*	hosp., ↑44.0%, p=0.25	Hydroxychloroquine as a primary prophylactic agent against sars-cov-2 infecti…
	Details	Retrospective HCQ users in Denmark, not showing a significant difference, however authors do not adjust for the very different baseline risk for systemi…		
May 31	Late	*Ramírez-García et al., Archiv…*	death, ↓67.0%, p<0.0001	Hydroxychloroquine and Tocilizumab in the Treatment of COVID-19: A Longitu…
	Details	Retrospective 403 hospitalized patients in Spain, showing lower mortality with treatment, however authors do not adjust for the differences between the…		
May 31	Late	*Smith et al., medRxiv, doi:10.…*	death, ↓27.2%, p<0.0001	Observational Study on 255 Mechanically Ventilated Covid Patients at the Beg…
	Details	Retrospective 255 mechanical ventilation patients in USA, showing that weight-adjusted HCQ+AZ improved survival by over 100%. QTc prolongation di…		
May 29	Dosi…	*Ali et al., Journal of Pharmac…*	dosing study	Optimizing the Use of Hydroxychloroquine in the Management of COVID-19 Gi…
	Details	Review of the mechanisms of action, pharmacokinetics and toxicity of HCQ, recommending use as early as possible with a loading dose in 3-4 divided …		
May 27	Early	*Million et al., Preprint (Prepri…*	death, ↓83.0%, p=0.0009	Early Treatment with Hydroxychloroquine and Azithromycin in 10,429 COVID-1…
	Details	Retrospective 10,429 outpatients in France, 8,315 treated with HCQ+AZ a median of 4 days from symptom onset, showing significantly lower mortality …		
May 17	PrEP	*Syed et al., medRxiv, doi:10.1…*	symp. case, ↑59.7%, p=0.41	Pre-Exposure Prophylaxis with Various Doses of Hdroxychloroquine among hi…
	Details	Small PrEP RCT of low risk patients, showing no significant differences. Authors report that there was no hospitalization, ICU care or death from COVID-…		
May 16	PrEP	*Rojas-Serrano et al., medRxiv…*	symp. case, ↓82.0%, p=0.12	Hydroxychloroquine For Prophylaxis Of COVID-19 In Health Workers: A Rando…
	Details	Early terminated HCQ PrEP RCT with 62 HCQ and 65 placebo patients, showing 82% lower cases with treatment, p = 0.12. NCT04318015. If the trial is c…		
May 12	Early	*Drancourt et al., Viruses, doi:10.3390/v13050890 (Peer Reviewed)*		SARS-CoV-2 Persistent Viral Shedding in the Context of Hydroxychloroquine-A…
	Details	Retrospective 3,737 patients in France, showing lower risk of persistent viral shedding with HCQ+AZ treatment.		
May 10	Late	*Sammartino et al., PLOS One,…*	death, ↑240.0%, p=0.002	Predictors for inpatient mortality during the first wave of the SARS-CoV-2 pand…
	Details	Retrospective 1,108 hospitalized patients in New York showing significantly higher mortality with HCQ treatment. Time based confounding is very likely…		
May 8	Revie…	*Vigbedor et al., Journal of Ap…*	review	Review of four major biomolecular target sites for COVID-19 and possible inhib…
	Details	Review of major target sites in SARS-CoV-2 and the host organism along with potential inhibitors.		
May 1	Late	*De Rosa et al., J. Clin. Med., …*	death, ↓35.0%, p=0.003	Risk Factors for Mortality in COVID-19 Hospitalized Patients in Piedmont, Italy:…
	Details	Retrospective 1,538 hospitalized patients in Italy, showing only HCQ associated with reduced mortality. Authors analyze mortality amongst those that …		
Apr 30	Late	*Bosaeed et al., Infect. Dis. Th…*	death, ↓3.7%, p=0.91	Favipiravir and Hydroxychloroquine Combination Therapy in Patients with Mo…
	Details	RCT 254 very late stage (93% on oxygen, 17% in ICU at baseline) hospitalized patients in Saudi Arabia not showing significant differences with HCQ+fa…		
Apr 29	Late	*Aghajani et al., Journal of M…*	death, ↓19.5%, p=0.09	Decreased In-Hospital Mortality Associated with Aspirin Administration in Hos…
	Details	Retrospective 991 hospitalized patients in Iran focusing on aspirin use but also showing results for HCQ, remdesivir, and favipiravir.		
Apr 28	Late	*Kokturk et al., Respiratory Me…*	death, ↑3.8%, p=0.97	The predictors of COVID-19 mortality in a nationwide cohort of Turkish patients
	Details	Retrospective 1,500 hospitalized late stage (median SaO2 87.7) patients in Turkey, showing no significant difference with HCQ treatment.		
Apr 27	Late	*Réa-Neto et al., Scientific Rep…*	death, ↑57.0%, p=0.20	An open-label randomized controlled trial evaluating the efficacy of chloroquin…
	Details	Early terminated very late stage (99% on oxygen, 81% in ICU, 18% on mechanical ventilation at baseline) RCT with 24 CQ patients, 29 HCQ, and 52 cont…		

Apr 26	Late	*Mohandas et al., (Peer Revie…*	death, ↑81.0%, p=0.007	Clinical review of COVID-19 patients presenting to a quaternary care private ho…
	Details	Retrospective 3,345 hospitalized patients in India, 11.5% treated with HCQ, showing unadjusted higher mortality with treatment. Confounding by indicat…		
Apr 23	Late	*Toya et al., SSRN (Preprint)*		A Cross-Country Analysis of the Determinants of COVID-19 Fatalities
	Details	Country based analysis finding lower mortality with the use of HCQ.		
Apr 22	Late	*Reis et al., JAMA Network Op…*	death, ↓66.0%, p=1.00	Effect of Early Treatment With Hydroxychloroquine or Lopinavir and Ritonavir o…
	Details	Early terminated RCT in Brazil showing lower mortality and hospitalization with HCQ, but not reaching statistical significance. Although the title include…		
Apr 15	PrEP	*Alzahrani et al., Rheumatolo…*	death, ↓58.8%, p=1.00	Clinical characteristics and outcome of COVID-19 in patients with rheumatic di…
	Details	Retrospective 47 rheumatic disease patients not finding significant differences with HCQ.		
Apr 15	PrEP	*Alegiani et al., Rheumatology…*	death, ↑8.0%, p=0.64	Risk of COVID-19 hospitalization and mortality in rheumatic patients treated w…
	Details	Retrospective database analysis case control study of rheumatic patients. When compared with other cDMARDs, HCQ users had significantly lower hos…		
Apr 14	PEP	*Seet et al., International Jour…*	severe case, ↓35.1%, p=0.14	Positive impact of oral hydroxychloroquine and povidone-iodine throat spray f…
	Details	Prophylaxis RCT in Singapore with 3,037 low risk patients, showing lower serious cases, lower symptomatic cases, and lower confirmed cases of COVI…		
Apr 6	Early	*Mokhtari et al., International J…*	death, ↓69.7%, p<0.0001	Clinical outcomes of patients with mild COVID-19 following treatment with hyd…
	Details	Retrospective 28,759 adult outpatients with mild COVID-19 in Iran, 7,295 treated with HCQ, showing significantly lower hospitalization and mortality wit…		
Apr 5	Safety	*Edington et al., European Jo…*	safety analysis	Safety of treatment with chloroquine and hydroxychloroquine: A ten-year syste…
	Details	Safety analysis of CQ and HCQ covering 46 RCTs with 23,132 patients, showing no mortality attributed to CQ/HCQ. Authors conclude that the data reinf…		
Mar 31	Late	*Alghamdi et al., Antibiotics, d…*	death, ↑6.9%, p=0.88	Clinical Efficacy of Hydroxychloroquine in Patients with COVID-19: Findings fro…
	Details	Retrospective 775 hospitalized patients in Saudi Arabia showing no significant difference. There was no adjustment for severity or comorbidities. Confo…		
Mar 26	Safety	*Faruqui et al., Indian J. Med. …*	safety analysis	Safety of hydroxychloroquine in healthcare workers for COVID-19 prophylaxis
	Details	Retrospective 1303 health care workers finding that HCQ prophylaxis was well tolerated. 20% reported an adverse event, mostly gastrointestinal. 1.5% r…		
Mar 24	PrEP	*Dev et al., Transactions of Th…*	cases, ↓26.0%, p=0.003	Risk factors and frequency of COVID-19 among healthcare workers at a tertiary…
	Details	Retrospective case control study of 3,100 healthcare workers in India showing lower cases with HCQ prophylaxis, and an inverse association between t…		
Mar 23	Late	*Barry et al., International Jour…*	death, ↓98.9%, p=0.60	Clinical Characteristics and Outcomes of Hospitalized COVID-19 Patients in a …
	Details	605 hospitalized patients in Saudi Arabia showing no mortality with HCQ (only 6 patients received HCQ).		
Mar 17	Late	*Stewart et al., PLoS ONE, doi:…*	death, ↑18.0%, p=0.27	COVID-19 Evidence Accelerator: A parallel analysis to describe the use of Hydr…
	Details	Collection of seven retrospective database analyses in the USA, showing higher mortality with treatment (not statistically significant). Results contradic…		
Mar 17	In Vit…	*Dang et al., bioRxiv, doi:10.1…*	*in vitro*	Structural basis of anti-SARS-CoV-2 activity of hydroxychloroquine: specific bi…
	Details	Microscopy/spectroscopy study showing that HCQ binds to both N-terminal domain and C-terminal domain of SARS-CoV-2 nucleocapsid protein to inh…		
Mar 12	Early	*Roy et al., medRxiv, doi:10.11…*	recov. time, ↓2.4%, p=0.96	Outcome of Different Therapeutic Interventions in Mild COVID-19 Patients in a …
	Details	Retrospective database analysis of 56 mild COVID-19 patients, all treated with vitamin C, vitamin D, and zinc, comparing ivermectin + doxycycline (n=1…		
Mar 9	PrEP	*Vivanco-Hidalgo et al., Euros…*	hosp., ↑46.0%, p=0.10	Incidence of COVID-19 in patients exposed to chloroquine and hydroxychloroq…
	Details	Retrospective database analysis of chronic HCQ users and matched control patients, failing to match or adjust for the very different baseline risk for sy…		
Mar 8	Late	*Martin-Vicente et al., medRxi…*	death, ↓59.3%, p=0.41	Absent or insufficient anti-SARS-CoV-2 S antibodies at ICU admission are asso…
	Details	Retrospective 92 ICU patients with almost all treated with HCQ and only one non-HCQ treated patient that died, showing unadjusted non-statistically si…		
Mar 4	Late	*Salvador et al., Cureus, doi:1…*	death, ↓32.9%, p=0.007	Clinical Features and Prognostic Factors of 245 Portuguese Patients Hospitali…
	Details	Prospective study of 245 hospitalized patients, 121 treated with HCQ, showing lower (non-statistically significant) mortality and higher ventilation at 30…		
Mar 2	PrEP	*Pham et al., Rheumatology A…*	death, ↓19.7%, p=0.77	Failure of chronic hydroxychloroquine in preventing severe complications of C…
	Details	Tiny retrospective database analysis of hospitalized COVID-19 patients with rheumatologic disease containing 14 chronic HCQ and 28 control patients.…		
Feb 28	Early	*Thakar et al., Indian J. Med. Res., doi:10.4103/ijmr.IJMR_3665_20 (…*		Chloroquine nasal drops in asymptomatic & mild COVID-19: An exploratory ran…
	Details	Small RCT for CQ nasal drops suggesting efficacy in preventing infection, while no significant difference was seen for patients that already had mild CO…		
Feb 28	PrEP	*Bhandari et al., International Journal of Medicine and Public Health,…*		A Preventive Study on Hydroxychloroquine Prophylaxis against COVID-19 in H…
	Details	Retrospective 4,239 healthcare workers using HCQ prophylaxis showing no mortality, 8 mild symptomatic cases, and 85 asymptomatic cases, with the …		
Feb 26	Early	*Amaravadi et al., medRxiv, d…*	no recov., ↓60.0%, p=0.13	Hydroxychloroquine for SARS-CoV-2 positive patients quarantined at home: Th…
	Details	Tiny early-terminated 34 patient RCT for outpatient treatment showing faster recovery with treatment (not statistically significant). All patients recovere…		
Feb 26	Late	*Tanriverdi et al., Turkish Journal of Medical Sciences, doi:doi:10.390…*		Hydroxychloroquine plus azithromycin and early hospital admission are benefi…
	Details	Retrospective 83 hospitalized patients in Turkey confirming that earlier treatment is better, and showing that the addition of AZ to HCQ reduced hospital…		
Feb 26	Early	*Giraud-Gatineau et al., Research Square, doi:rs.3.rs-251817/v1 (Pre…*		The Need for Early Management in Patients With COVID-19
	Details	Review of early treatment of COVID-19 at IHU Méditerranée Infection in France, including HCQ+AZ treatment, comparing outcomes to those for all of Fr…		

Feb 23	Late	*Gonzalez et al., medRxiv, doi:…*	death, ↓62.6%, p=0.27	Efficacy and safety of Ivermectin and Hydroxychloroquine in patients with seve…
	Details	RCT late stage severe condition (93% SOFA ≥ 2, 96% APACHE ≥ 8) high comorbidity hospitalized patients in Mexico with 33 HCQ and 37 control patient…		
Feb 20	PrEP	*Bae et al., Viruses 2021, doi:…*	cases, ↓30.3%, p=0.17	Recent Hydroxychloroquine Use Is Not Significantly Associated with Positive P…
	Details	Retrospective database analysis of prior HCQ usage in South Korea, showing non-statistically significantly lower mortality and cases with treatment.		
Feb 19	Late	*Lamback et al., The Brazilian …*	death, ↓8.9%, p=0.83	Hydroxychloroquine with azithromycin in patients hospitalized for mild and m…
	Details	Retrospective 193 hospitalized patients in Brazil not finding a significant difference with HCQ. The control group was composed of patients refusing HC…		
Feb 18	Late	*Awad et al., American Journa…*	death, ↑19.1%, p=0.60	Impact of hydroxychloroquine on disease progression and ICU admissions in …
	Details	This paper has inconsistent values - the number of treatment and control patients differs in the text and Table 1, we have used treatment 188 and contr…		
Feb 17	Late	*Lora-Tamayo et al., J. Infecti…*	death, ↓50.5%, p<0.0001	Early Lopinavir/ritonavir does not reduce mortality in COVID-19 patients: result…
	Details	Lopinavir/ritonavir retrospective study also showing univariate results for HCQ, with significantly lower mortality.		
Feb 10	Early,…	*Desai et al., J. Clinical Medicine, doi:10.3390/jcm10040686 (Peer R…*		The Use of Antiviral Agents against SARS-CoV-2: Ineffective or Time and Age D…
	Details	Retrospective 143 COVID-19 hospitalized patients >65yo, showing adjusted OR for antiviral treatment starting within 6 days of 0.44 [0.2-0.9], p = 0.02, c…		
Feb 9	Late	*Thompson et al., NCT04332…*	death, ↑6.2%, p=0.84	Outcomes Related to COVID-19 Treated With Hydroxychloroquine Among In-pa…
	Details	Late stage (65% on oxygen at baseline) low-dose RCT, not showing significant differences with treatment.		
Feb 9	Meta	*Lounnas e al., Archives of Mi…*	meta-analysis	Revisiting a Meta-analysis Shows that Hydroxychloroquine with Azithromycin …
	Details	Analysis of the Fiolet meta analysis and correction of bias evaluation, showing HCQ RR 0.45 [0.31-0.59], and HCQ+AZ RR 0.34 [0.06-0.61].		
Feb 9	Late	*Purwati et al., Biochemistry R…*	viral+, ↓66.3%, p<0.0001	A Randomized, Double-Blind, Multicenter Clinical Study Comparing the Efficac…
	Details	RCT 754 patients comparing HCQ+AZ along with other treatment groups using lopinavir/ritonavir and doxycycline to a control group taking AZ, finding …		
Feb 5	PrEP	*Fitzgerald et al., medRxiv, doi…*	cases, ↓8.5%, p=0.52	Risk Factors for Infection and Health Impacts of the COVID-19 Pandemic in Pe…
	Details	Retrospective 4666 people with autoimmune or inflammatory conditions, showing HCQ adjusted risk of COVID-19 OR 0.91 [0.68-1.23]. Results are not a…		
Feb 5	Late	*Hernandez-Cardenas et al., …*	death, ↓12.0%, p=0.66	Hydroxychloroquine for the treatment of severe respiratory infection by COVID-…
	Details	Very late stage RCT with 214 patients, mean SpO_2 65%, 162 on mechanical ventilation, showing no signficant difference in mortality. Patients not intub…		
Feb 5	Late	*Ouedraogo et al., Revue des …*	death, ↓33.0%, p=0.38	Factors associated with the occurrence of acute respiratory distress and death…
	Details	Retrospective 456 patients in Burkina Faso showing lower risk of ARDS (p=0.001) and mortality (p=0.38) with HCQ.		
Feb 1	Revie…	*Alexander et al., medRxiv, doi…*	review	Early Multidrug Outpatient Treatment of SARS-CoV-2 Infection (COVID-19) and …
	Details	Review of studies on treatment of COVID-19 for nursing home residents, concluding that there is a large >60% mortality risk reduction associated with …		
Feb 1	Late	*Ubaldo et al., Critical Care Re…*	death, ↓18.4%, p=0.64	COVID-19: A Single-Center ICU Experience of the First Wave in the Philippines
	Details	Retrospective ICU patients in the Philippines showing unadjusted HCQ RR 0.82, p = 0.64.		
Jan 31	PrEP	*Naderi et al., Immunopathologia Persa, doi:10.34172/ipp.2021.29 (…*		Prophylactic effects of hydroxychloroquine on the incidence of COVID-19 in pa…
	Details	Prospective observational study of 215 RA patients treated with HCQ showing 9 cases, 1 hospitalization (without ICU/intubation), and no mortality.		
Jan 31	Late	*Roig et al., Revista Espanola …*	death, ↓15.6%, p=0.76	Clinical and pharmacological data in COVID-19 hospitalized nonagenarian pat…
	Details	Retrospective 79 hospitalized nonagenarian patients showing unadjusted HCQ mortality RR 0.84, p = 0.76.		
Jan 29	Late	*Di Castelnuovo et al., Journal…*	death, ↓40.0%, p<0.0001	Disentangling the Association of Hydroxychloroquine Treatment with Mortality…
	Details	Retrospective 4,396 hospitalized patients in Italy showing significantly lower mortality with HCQ treatment, and identifying greater efficacy for a subgro…		
Jan 27	PrEP	*Trefond et al., SSRM, doi:10.2…*	death, ↑16.6%, p=0.80	Impact of hydroxychloroquine used as DMARD on SARS CoV-2 tests and COVI…
	Details	Retrospective 71 chronic HCQ patients compared with 191 matched controls, analyzing only those with a highly suspected or confirmed diagnosis of C…		
Jan 26	Safety	*Eftekhar et al., medRxiv, doi:1…*	safety analysis	Hydroxychloroquine and azithromycin: As a double edge sword for COVID-19?
	Details	Retrospective 172 hospitalized patients, 83% treated and HCQ+AZ and 17% with HCQ, not finding a significant difference in QTc prolongation, but reco…		
Jan 25	Early	*Dabbous et al., Archives of Virology, doi:10.1007/s00705-021-0495…*		Efficacy of favipiravir in COVID-19 treatment: a multi-center randomized study
	Details	RCT with 44 favipiravir patients and 48 CQ patients, showing non-statistically significant lower mortality, ventilation, and hospitalization time with favi…		
Jan 25	In Sili…	*Hussein et al., Journal of Molecular Structure, doi:10.1016/j.molstru…*		Molecular Docking Identification for the efficacy of Some Zinc Complexes with …
	Details	Molecular dynamics analysis recommending Zn (CQ) Cl2(H2O) and Zn (HCQ) Cl2(H2O) as potential inhibitors for COVID-19 Mpro. Zn (HCQ) Cl2(H2O) e…		
Jan 24	Early	*Zelenko, Z., Preprint (Preprint)*		Nebulized Hydroxychloroquine for COVID-19 Treatment: 80x Improvement in Br…
	Details	Report on the use of nebulized HCQ showing much more rapid improvement compared to tablets, with 95% of patients experiencing improved breathin…		
Jan 23	PrEP	*Cifuentes et al., Medicina Clínica (English Edition), doi:10.1016/j.me…*		Incidence of COVID-19 in patients under chronic treatment with hydroxychloro…
	Details	Retrospective 3,817 chronic HCQ patients showing 4.4% COVID-19 positive rate, 1.3% severe. There is no comparison with a control group. Authors not…		
Jan 18	Late	*Li et al., Science China Life S…*	no disch., ↓50.0%, p=0.08	Evaluation of the efficacy and safety of hydroxychloroquine in comparison wit…
	Details	Small RCT comparing HCQ and CQ in China with 88 very late stage (17.6 days from onset to hospitalization and ~10 days to randomization) patients. …		

Jan 12	Late	*Li et al., Research Square, doi…*	viral- time, ↑40.0%, p=0.06	Treatment of COVID-19 patients with hydroxychloroquine or chloroquine: A retr…
	Details	Small retrospective database analysis of 37 late stage patients hospitalized in an intensive care center in China, not finding a significant difference in vi…		
Jan 10	PrEP	*Rangel et al., Journal of the …*	death, ↓25.1%, p=0.77	Chronic Hydroxychloroquine Therapy and COVID-19 Outcomes: A Retrospectiv…
	Details	Retrospective 50 COVID-19 patients that take chronic HCQ, compared to a matched sample of patients not taking chronic HCQ, showing lower mortality…		
Jan 8	Late	*Yegerov et al., medRxiv, doi:1…*	death, ↓95.3%, p=1.00	Epidemiological and Clinical Characteristics, and Virologic Features of COVID-…
	Details	Retrospective 1,072 hospitalized patients in Kazakhstan showing no mortality for HCQ treated patients, however only 23 patients received treatment - t…		
Jan 7	In Sili…	*Baildya et al., Journal of Molecular Structure, doi:10.1016/j.molstru…*		Inhibitory capacity of Chloroquine against SARS-COV-2 by effective binding wit…
	Details	Molecular docking study of 16 drugs showing CQ had the highest binding affinity with ACE2, and molecular dynamics study of the docked CQ-ACE2 str…		
Jan 6	In Sili…	*Noureddine et al., Journal of King Saud University - Science, doi:10.…*		Quantum chemical studies on molecular structure, AIM, ELF, RDG and antiviral …
	Details	*In silico* analysis of hydroxychloroquine and hydroxychloroquine sulfate predicting that hydroxychloroquine sulfate is more stable and effective for COV…		
Jan 4	Safety	*Gautret et al., International J…*	safety analysis	Safety profile of hydroxychloroquine and azithromycin combined treatment in …
	Details	Report on the safety of HCQ+AZ with 3,737 COVID-19 patients. 138 had contraindications and treatment was discontinued in 12 cases due to QTc prol…		
Jan 2	Late	*Sarfaraz et al., medRxiv, doi:…*	death, ↑45.0%, p=0.07	Determinants of in-hospital mortality in COVID-19; a prospective cohort study f…
	Details	Retrospective 186 hospitalized patients in Pakistan showing unadjusted HCQ mortality RR 1.45, *p* = 0.07. Confounding by indication is likely.		
Jan 1	Late	*Lotfy et al., Turk. Thorac. J., d…*	death, ↑24.8%, p=0.76	Use of Hydroxychloroquine in Patients with COVID-19: A Retrospective Observ…
	Details	Retrospective 202 patients in Saudi Arabia not showing significant differences with treatment. No information is provided on how patients were selecte…		
Jan 1	Late	*Sands et al., International Jo…*	death, ↑69.9%, p=0.01	No clinical benefit in mortality associated with hydroxychloroquine treatment i…
	Details	Retrospective database analysis of 1,669 patients in the US showing OR 1.81, *p* = 0.01. Confounding by indication is likely. COVID-19 was determined v…		
Dec 31 2020	Revie…	*Matada et al., Bioorganic & …*	review	A comprehensive review on the biological interest of quinoline and its derivativ…
	Details	Review of quinolone and derivatives, natural and drug sources, and biological activity.		
Dec 31 2020	Late	*Psevdos et al., Open Forum I…*	death, ↑63.5%, p=0.52	Corona Virus Disease-19 (COVID-19) in a Veterans Affairs Hospital at Suffolk C…
	Details	Retrospective 67 hospitalized patients in the USA showing non-statistically significant unadjusted increased mortality with HCQ. Confounding by indic…		
Dec 31 2020	Late	*Texeira et al., Open Forum Inf…*	death, ↑79.3%, p=0.10	Characteristics and outcomes of COVID-19 patients admitted to a regional hea…
	Details	Retrospective 161 hospitalized patients in the USA showing non-statistically significant unadjusted increased mortality with HCQ. Confounding by indi…		
Dec 31 2020	Late	*Vernaz et al., Swiss Medical …*	death, ↓15.3%, p=0.71	Early experimental COVID-19 therapies: associations with length of hospital st…
	Details	Retrospective 840 hospitalized patients in Switzerland showing non-statistically significant lower mortality with HCQ but significantly longer hospitaliz…		
Dec 30 2020	Revie…	*McCullough et al., Reviews i…*	review	Multifaceted highly targeted sequential multidrug treatment of early ambulator…
	Details	Review urging early treatment of COVID-19 with sequential multidrug treatment that has been shown to be safe and effective. Proposed treatment inclu…		
Dec 30 2020	Early	*Procter et al., Reviews in Cardiovascular Medicine, doi:10.31083/j.rc…*		Clinical outcomes after early ambulatory multidrug therapy for high-risk SARS-…
	Details	Retrospective 922 outpatients, with 320 treated early due to age>50 or comorbidities, showing 2.2% hospitalization and 0.3% death, which authors note…		
Dec 29 2020	Late	*Güner et al., Journal of Infect…*	ICU, ↓77.3%, p=0.16	Comparing ICU Admission Rates of Mild/Moderate COVID-19 Patients Treated …
	Details	Retrospective 824 hospitalized patients in Turkey showing lower ICU admission for HCQ vs. favipiravir.		
Dec 28 2020	PrEP	*Cordtz et al., Rheumatology, …*	hosp., ↓24.0%, p=0.67	Incidence and severeness of COVID-19 hospitalisation in patients with inflam…
	Details	Retrospective 58,052 rheumatic disease patients in Denmark showing that RA patients have a higher risk of COVID-19 hospitalization in general. HCQ tr…		
Dec 24 2020	Late	*Chari et al., Blood, doi:10.118…*	death, ↓33.1%, p=0.17	Clinical features associated with COVID-19 outcome in multiple myeloma: first …
	Details	Retrospective multiple myeloma patients showing lower mortality with HCQ treatment, unadjusted RR 0.67, *p* = 0.17 (data is in the supplementary mate…		
Dec 23 2020	Early	*Su et al., BioScience Trends, …*	progression, ↓84.9%, p=0.006	Efficacy of early hydroxychloroquine treatment in preventing COVID-19 pneum…
	Details	85% lower disease progression with early use of HCQ. Retrospective 616 patients in China showing adjusted progression HR 0.15, *p* = 0.006.		
Dec 23 2020	Late	*Taccone et al., The Lancet Re…*	death, ↓24.7%, p=0.0004	The role of organizational characteristics on the outcome of COVID-19 patient…
	Details	Retrospective 1,747 ICU patients in Belgium showing lower mortality with HCQ, multivariate mixed effects analysis HCQ aOR 0.64 [0.45-0.92].		
Dec 22 2020	Late	*Cangiano et al., Aging, doi:10…*	death, ↓73.4%, p=0.03	Mortality in an Italian nursing home during COVID-19 pandemic: correlation wi…
	Details	73% lower mortality with HCQ. Analysis of 98 PCR+ nursing home residents in Italy, mean age 90, showing HCQ mortality RR 0.27, *p* = 0.03. Subject to c…		
Dec 19 2020	PrEP	*Huh et al., International Jour…*	progression, ↑251.0%, p=0.11	Association of prescribed medications with the risk of COVID-19 infection and …
	Details	Retrospective database analysis with 17 existing users of HCQ and 5 severe cases, showing no significant difference for cases and higher risk for sever…		
Dec 18 2020	Late	*Matangila et al., PLoS ONE, d…*	death, ↓54.9%, p=0.21	Clinical characteristics of COVID-19 patients hospitalized at Clinique Ngaliema…
	Details	55% lower death with HCQ+AZ. Retrospective 160 hospitalized patients in the Democratic Republic of Congo, 92% receiving HCQ+AZ, showing adjusted…		
Dec 16 2020	Late	*Signes-Costa et al., Archivos …*	death, ↓47.0%, p=0.0005	Prevalence and 30-day mortality in hospitalized patients with COVID-19 and pr…
	Details	47% lower mortality with HCQ/CQ. Retrospective 1,271 patients with lung disease in Canada, China, Cuba, Ecuador, Germany, Italy and Spain, 83% treat…		

Dec 16 2020	PrEP	*Gönenli et al., Research Squa…*	progression, ↓29.7%, p=0.77	Prophylactic use of Hydroxychloroquine among Physicians working in Pande…
	Details	Small prophylaxis survey showing lower, but not statistically significant, progression to pneumonia (3 of 148 HCQ, 12 of 416 control), RR 0.70, *p* = 0.77.…		
Dec 14 2020	Late	*De Luna et al., medRxiv, doi:1…*	death, ↑104.5%, p=0.69	Clinical and Demographic Characteristics of COVID-19 Patients Admitted in a …
	Details	Retrospective 150 patients in the Dominican Republic, 132 treated with HCQ, showing higher mortality with treatment in unadjusted results. Confoundin…		
Dec 14 2020	Late	*Sofian et al., Wiener Medizinische Wochenschrift, doi:10.1007/s103…*		SARS-CoV-2, a virus with many faces: a series of cases with prolonged persist…
	Details	Report on a series of 10 patients experiencing prolonged COVID-19 symptoms that were given HCQ 250mg bid for 5 days, with resolution of symptoms …		
Dec 14 2020	Late	*Orioli et al., Diabetes & Metab…*	death, ↓12.7%, p=1.00	Clinical characteristics and short-term prognosis of in-patients with diabetes a…
	Details	Small retrospective study of 73 diabetic patients in Belgium, 55 HCQ patients, showing HCQ RR 0.87, *p* = 1.0.		
Dec 14 2020	Late	*Naseem et al., medRxiv, doi:1…*	death, ↓33.3%, p=0.34	Predicting mortality in SARS-COV-2 (COVID-19) positive patients in the inpatie…
	Details	Retrospective 1,214 hospitalized patients in Pakistan, 77 HCQ patients, showing 33% lower mortality with HCQ, multivariate Cox HR 0.67, *p* = 0.34.		
Dec 14 2020	Late	*Tan et al., Virus Research, doi…*	hosp. time, ↓35.2%, p=0.04	A retrospective comparison of drugs against COVID-19
	Details	Retrospective 333 patients in China, with only 8 HCQ patients, showing shorter duration of hospitalization with HCQ.		
Dec 11 2020	Late	*Bielza et al., Journal of the A…*	death, ↓21.5%, p=0.09	Clinical characteristics, frailty and mortality of residents with COVID-19 in nursi…
	Details	Retrospective 630 elderly patients in Spain showing lower mortality with HCQ treatment, unadjusted relative risk RR 0.78, *p* = 0.09. HCQ was used more …		
Dec 11 2020	Early	*Sogut et al., The American Jo…*	safety analysis	Safety and efficacy of hydroxychloroquine in 152 outpatients with confirmed C…
	Details	Safety study of 152 outpatients concluding that HCQ is safe for COVID-19, was well tolerated, and was not associated with a risk of ventricular arrhyth…		
Dec 11 2020	PrEP	*Jung et al., Clinical Microbiol…*	death, ↓59.3%, p=1.00	Effect of hydroxychloroquine pre-exposure on infection with SARS-CoV-2 in rhe…
	Details	Retrospective cohort study of RA and SLE patients not showing a significant difference in PCR+ cases. PCR+ does not distinguish asymptomatic cases …		
Dec 10 2020	Late	*Alqassieh et al., F1000Resea…*	hosp. time, ↓18.2%, p=0.11	Clinical characteristics and predictors of the duration of hospital stay in COVID…
	Details	Prospective observational study of 131 COVID-19 patients in Jordan, showing 18% shorter hospital stay with HCQ, *p* = 0.11.		
Dec 10 2020	News	*Italian Council of State (News)*	news	Consiglio di Stato, sì all'uso dell'idrossiclorachina per la cura del Covid
	Details	Consiglio di Stato ruling in Italy re-establishes the right of Italian MDs to prescribe HCQ, which was suspended after the retracted Lancet study.		
Dec 9 2020	Late	*Johnston et al., EClinicalMed…*	hosp., ↓29.9%, p=0.73	Hydroxychloroquine with or Without Azithromycin for Treatment of Early SARS-…
	Details	Small early terminated late treatment RCT comparing vitamin C + folic acid, HCQ + folic acid, and HCQ+AZ, showing non-statistically significantly lower…		
Dec 9 2020	Early	*Agusti et al., Enfermedades I…*	progression, ↓68.4%, p=0.21	Efficacy and safety of hydroxychloroquine in healthcare professionals with mil…
	Details	Small trial of low dose HCQ for healthcare workers with mild SARS-CoV-2 showing 68% lower progression to pneumonia, *p* = 0.21, and faster, but not st…		
Dec 9 2020	Late	*Guglielmetti et al., Journal of…*	death, ↓35.0%, p=0.22	Severe COVID-19 pneumonia in Piacenza, Italy – a cohort study of the first pan…
	Details	Retrospective 218 hospitalized patients in Italy showing non-statistically significant 35% lower mortality with HCQ, hazard ratio aHR 0.65 [0.33–1.30].		
Dec 7 2020	PEP	*Barnabas et al., Annals of Int…*	hosp., ↑3.7%, p=1.00	Hydroxychloroquine for Post-exposure Prophylaxis to Prevent Acute Respirator…
	Details	Early terminated PEP RCT comparing HCQ and vitamin C with 781 low-risk patients (83% household contacts), reporting no significant differences. Diff…		
Dec 4 2020	Late	*Ozturk et al., Nephrology Dial…*	death, ↓43.9%, p=0.14	Mortality analysis of COVID-19 infection in chronic kidney disease, haemodialy…
	Details	Retrospective 1210 hospitalized patients in Turkey focused on chronic kidney disease, haemodialysis and renal transplant patients, but also showing l…		
Dec 4 2020	Late	*Modrák et al., medRxiv, doi:1…*	death, ↓59.0%, p=0.04	Detailed disease progression of 213 patients hospitalized with Covid-19 in the …
	Details	Retrospective 213 hospitalized patients in Czech Republic showing lower mortality with HCQ. Subject to confounding by indication.		
Dec 4 2020	Late	*Peng et al., Nephrology Dialy…*	progression, ↓10.8%, p=0.63	Early versus late acute kidney injury among patients with COVID-19—a multice…
	Details	Retrospective 4020 hospitalized patients in China showing non-statistically significant lower risk of acute kidney injury with HCQ.		
Dec 2 2020	PEP	*Wiseman et al., medRxiv, doi:…*	cases, ↓42.0%, p=0.04	Effective post-exposure prophylaxis of Covid-19 is associated with use of hydr…
	Details	6th independent analysis showing efficacy from the Boulware PEP trial. This prospective analysis corrects an error in the NEJM paper where shipping d…		
Dec 1 2020	Late	*Capsoni et al., Research Squ…*	ventilation, ↓40.0%, p=0.30	CPAP Treatment In COVID-19 Patients: A Retrospective Observational Study In …
	Details	Small 52 patient retrospective study of patients with acute respiratory failure showing lower rates of intubation with HCQ.		
Nov 30 2020	Late	*Abdulrahman et al., medRxiv,…*	death, ↓16.7%, p=1.00	The efficacy and safety of hydroxychloroquine in COVID19 patients : a multice…
	Details	Retrospective medical record analysis of acute care patients in Bahrain not showing a significant effect of HCQ. Confounding by indication is likely. Ma…		
Nov 29 2020	Late	*Abd-Elsalam et al., Biological Trace Element Research, doi:10.1007/…*		Do Zinc Supplements Enhance the Clinical Efficacy of Hydroxychloroquine?: a …
	Details	191 patient RCT in Egypt comparing the addition of zinc to HCQ, not showing a significant difference. Clinical recovery at 28 days was 79.2% in the zin…		
Nov 28 2020	Late	*Lambermont et al., Critical C…*	death, ↓32.3%, p=0.46	Predictors of Mortality and Effect of Drug Therapies in Mechanically Ventilated…
	Details	Retrospective 247 mechanically ventilated patients showing lower mortality with HCQ, but not statistically significant on multiple Cox regression. The p…		
Nov 28 2020	N/A	*Ruiz et al., International Jour…*	dosing study	Hydroxychloroquine lung pharmacokinetics in critically ill patients infected wit…
	Details	HCQ lung pharmacokinetic study confirming that lung concentrations can be much higher than plasma. The median lung epithelial lining fluid concent…		

Nov 28 2020	Late	*Rodriguez-Gonzalez et al., Int…*	death, ↓22.8%, p=0.26	COVID-19 in hospitalized patients in Spain: a cohort study in Madrid
	Details	Retrospective 1255 patients in Spain showing lower mortality with HCQ. Subject to confounding by indication.		
Nov 27 2020	Late	*van Halem et al., BMC Infect …*	death, ↓31.6%, p=0.05	Risk factors for mortality in hospitalized patients with COVID-19 at the start of …
	Details	Retrospective 319 hospitalized patients in Belgium showing lower mortality with HCQ, although not reported to be statistically significant.		
Nov 26 2020	Late	*Burdick et al., Journal of Clini…*	death, ↑59.0%, p=0.12	Is Machine Learning a Better Way to IdentifyCOVID-19 Patients Who Might Ben…
	Details	290 patient observational trial in the USA, not showing a significant difference with HCQ treatment overall, but showing significantly lower mortality in …		
Nov 24 2020	Late	*Abbas et al., Int. J. Clin. Pract., doi:10.1111/ijcp.13856 (Peer Review…*		Assessment of COVID-19 Treatment containing both Hydroxychloroquine and …
	Details	Prospective study of 161 hospitalized patients in Iraq showing HCQ+AZ appears to help recovery. Most mortality was in patients that were already in cr…		
Nov 23 2020	Late	*Qin et al., Thrombosis Resear…*	death, ↓34.3%, p=0.61	Low molecular weight heparin and 28-day mortality among patients with coro…
	Details	Low molecular weight heparin study also showing results for HCQ treatment, unadjusted HCQ mortality relative risk RR 0.66, p = 0.61.		
Nov 21 2020	PrEP	*Revollo et al., Journal of Anti…*	cases, ↓23.0%, p=0.52	Hydroxychloroquine pre-exposure prophylaxis for COVID-19 in healthcare work…
	Details	Retrospective PrEP analysis with 69 healthcare workers on PrEP HCQ, and 418 control. Authors report PCR and IgG results, with no baseline results for …		
Nov 20 2020	Early	*Omrani et al., EClinicalMedici…*	hosp., ↓12.5%, p=1.00	Randomized double-blinded placebo-controlled trial of hydroxychloroquine wit…
	Details	Low risk patient RCT for HCQ+AZ and HCQ vs. control, not showing any significant differences. Authors note that the results are not applicable to highe…		
Nov 19 2020	Late	*Falcone et al., Open Forum I…*	death, ↓65.0%, p=0.20	Role of low-molecular weight heparin in hospitalized patients with SARS-CoV-…
	Details	Prospective observational study of 315 hospitalized patients in Italy showing 65% lower mortality with HCQ. The median treatment delay was 6 days fo…		
Nov 18 2020	Late	*Budhiraja et al., medRxiv, doi…*	death, ↓65.4%, p<0.0001	Clinical Profile of First 1000 COVID-19 Cases Admitted at Tertiary Care Hospita…
	Details	Retrospective 976 hospitalized patients with 834 treated with HCQ+AZ showing HCQ mortality relative risk RR 0.35, p < 0.0001. Note that in this case H…		
Nov 17 2020	Late	*Boari et al, Biosci. Rep., doi:1…*	death, ↓54.5%, p<0.001	Prognostic factors and predictors of outcome in patients with COVID-19 and re…
	Details	Retrospective 258 hospitalized patients in Italy showing lower mortality with HCQ treatment, unadjusted relative risk RR 0.455, p<0.001. Data is in the s…		
Nov 13 2020	Late	*Sheshah et al., Diabetes Rese…*	death, ↓80.0%, p<0.001	Prevalence of Diabetes, Management and Outcomes among Covid-19 Adult P…
	Details	Retrospective 300 hospitalized patients in Saudi Arabia showing HCQ adjusted odds ratio aOR 0.12, p < 0.001.		
Nov 12 2020	Early	*Simova et al., New Microbes …*	hosp., ↓93.8%, p=0.01	Hydroxychloroquine for prophylaxis and treatment of COVID-19 in health care …
	Details	100% reduction in hospitalization and cases with early treatment using HCQ+AZ+zinc. Brief report on healthcare workers in Bulgaria. 0 hospitalizations…		
Nov 12 2020	PEP	*Simova et al., New Microbes …*	cases, ↓92.7%, p=0.01	Hydroxychloroquine for prophylaxis and treatment of COVID-19 in health care …
	Details	100% reduction in cases with HCQ+zinc post-exposure prophylaxis. Brief report for healthcare workers in Bulgaria. 0 cases with treatment vs. 3 for cont…		
Nov 12 2020	N/A	*Tchounga et al., Journal of P…*	meta-analysis	Composition analysis of falsified chloroquine phosphate samples seized durin…
	Details	Analysis of fake CQ tablets finding: - no CQ in six samples, substituted with metronidazole (at sub-therapeutic levels) or paracetamol. - trace levels of p…		
Nov 11 2020	Late	*Águila-Gordo et al., Revista E…*	death, ↓67.0%, p=0.10	Mortality and associated prognostic factors in elderly and very elderly hospital…
	Details	67% lower mortality with HCQ. Retrospective 416 elderly patients in Spain showing adjusted HCQ mortality hazard ratio HR 0.33, p = 0.1.		
Nov 9 2020	Late	*Khamis et al., International Journal of Infectious Diseases, doi:10.10…*		Randomized Controlled Open Label Trial on the Use of Favipiravir Combined w…
	Details	Small 89 patient RCT comparing favipiravir and inhaled interferon with HCQ for moderate to severe COVID-19 pneumonia, not finding significant differe…		
Nov 9 2020	Late	*Rodriguez et al., Medicina Int…*	death, ↓59.0%, p=0.23	Severe infection due to the SARS-CoV-2 coronavirus: Experience of a tertiary ho…
	Details	Small prospective study of 43 hospitalized patients with 39 taking HCQ, showing unadjusted mortality relative risk RR 0.41, p=0.23.		
Nov 9 2020	Late	*Self et al., JAMA, doi:10.1001…*	death, ↑6.2%, p=0.84	Effect of Hydroxychloroquine on Clinical Status at 14 Days in Hospitalized Pati…
	Details	Early terminated very late stage (65% on supplemental oxygen) RCT with 242 HCQ and 237 control patients not showing a significant difference, 28 da…		
Nov 9 2020	Late	*Brown et al., Annals of the American Thoracic Society, doi:10.1513/…*		Hydroxychloroquine vs. Azithromycin for Hospitalized Patients with COVID-19 …
	Details	Small early terminated very late stage (86% on oxygen, 44% enrolled in the ICU) RCT comparing HCQ vs. AZ, not finding a significant difference betwee…		
Nov 9 2020	Late	*Núñez-Gil et al., Intern. Emer…*	death, ↓7.9%, p=0.005	Mortality risk assessment in Spain and Italy, insights of the HOPE COVID-19 re…
	Details	Retrospective database study of 1,021 patients in Ecuador, Germany, Italy, and Spain, showing HCQ propensity score adjusted mortality odds ratio aOR …		
Nov 6 2020	PrEP	*Mathai et al., J. Marine Medi…*	cases, ↓89.5%, p<0.0001	Hydroxychloroquine as pre-exposure prophylaxis against COVID-19 in health-c…
	Details	90% reduction in cases with HCQ pre-exposure prophylaxis. Retrospective 604 healthcare workers.		
Nov 6 2020	PrEP	*Datta et al., Journal of Vacci…*	cases, ↓22.1%, p=0.47	No Role of HCQ in COVID-19 Prophylaxis: A Survey amongst Indian Doctors
	Details	Survey of Indian doctors not finding a significant effect of HCQ prophylaxis.		
Nov 6 2020	PEP	*Dhibar et al., International Jo…*	cases, ↓41.0%, p=0.03	Post Exposure Prophylaxis with Hydroxychloroquine (HCQ) for the Prevention …
	Details	41% reduction in cases with HCQ PEP. Prospective open label trial with 132 HCQ patients and 185 control patients showing RR 0.59, p=0.03. 50% reduc…		
Nov 5 2020	Late	*Maldonado et al., Nefrología,…*	death, ↓90.9%, p=0.17	COVID-19 incidence and outcomes in a home dialysis unit in Madrid (Spain) at…
	Details	Very small retrospective of 12 dialysis patients showing 1/11 deaths with HCQ and 1/1 without HCQ.		

Nov 5 2020	Late	*Rodriguez-Nava et al., Mayo …*	death, ↑6.3%, p=0.77	Clinical characteristics and risk factors for mortality of hospitalized patients wi…
	Details	Retrospective 313 patients, mostly critical stage and mostly requiring respiratory support, showing unadjusted RR 1.06, *p* = 0.77. Confounding by indic…		
Nov 4 2020	Late	*Salazar et al., The American …*	death, ↑37.0%, p=0.28	Significantly Decreased Mortality in a Large Cohort of Coronavirus Disease 201…
	Details	Convalescent plasma study also showing mortality based on HCQ treatment, unadjusted hazard ratio uHR 1.37, *p* = 0.28. Confounding by indication is …		
Nov 4 2020	Early	*Cadegiani et al., New Microb…*	death, ↓81.2%, p=0.21	Early COVID-19 Therapy with azithromycin plus nitazoxanide, ivermectin or hy…
	Details	Comparison of HCQ, nitazoxanide, and ivermectin showing similar effectiveness for overall clinical outcomes in COVID-19 when used before seven day…		
Nov 3 2020	PrEP	*Behera et al., PLoS ONE, doi:…*	cases, ↓27.9%, p=0.29	Role of ivermectin in the prevention of SARS-CoV-2 infection among healthcare…
	Details	Retrospective matched case-control prophylaxis study for HCQ, ivermectin, and vitamin C with 372 healthcare workers, showing lower COVID-19 incide…		
Nov 2 2020	Late	*López et al., Annals of Pediat…*	progression, ↓64.3%, p=0.02	Telemedicine follow-ups for COVID-19: experience in a tertiary hospital
	Details	Retrospective 72 pediatric patients showing HCQ associated with a shorter duration of fever (*p*=0.023), less progression (*p*=0.016), and fewer return visi…		
Oct 31 2020	Early	*Szente Fonseca et al., Travel …*	hosp., ↓64.0%, p=0.0008	Risk of Hospitalization for Covid-19 Outpatients Treated with Various Drug Reg…
	Details	64% lower hospitalization with HCQ. Retrospective 717 patients in Brazil with early treatment, adjusted OR 0.32, *p*=0.00081, for HCQ versus no medicati…		
Oct 30 2020	Late	*Tehrani et al., International J…*	death, ↓13.4%, p=0.63	Risk factors for mortality in adult COVID-19 patients: frailty predicts fatal outco…
	Details	Retrospective 255 hospitalized patients, 65 treated with HCQ, showing unadjusted RR 0.87, *p*=0.63. Confounding by indication is likely.		
Oct 27 2020	PrEP	*Arleo et al., medRxiv, doi:10.1…*	death, ↓50.0%, p=0.67	Clinical Course and Outcomes of coronavirus disease 2019 (COVID-19) in Rhe…
	Details	Retrospective hospitalized rheumatic disease patients showing 50% lower mortality for patients on HCQ.		
Oct 27 2020	Late	*Choi et al., International Jour…*	viral- time, ↑22.0%, p<0.0001	Comparison of antiviral effect for mild-to-moderate COVID-19 cases between l…
	Details	Health insurance database analysis failing to adjust for disease severity and not finding a significant difference in time to PCR- for LPV/r and HCQ. The…		
Oct 26 2020	Late	*Frontera et al., Research Squ…*	death, ↓37.0%, p=0.01	Treatment with Zinc is Associated with Reduced In-Hospital Mortality Among …
	Details	Retrospective 3,473 hospitalized patients showing lower mortality with HCQ+zinc.		
Oct 26 2020	Early	*Derwand et al., International …*	death, ↓79.4%, p=0.12	COVID-19 Outpatients – Early Risk-Stratified Treatment with Zinc Plus Low Do…
	Details	79% lower mortality and 82% lower hospitalization with early HCQ+AZ+Z. No cardiac side effects. Retrospective 518 patients (141 treated, 377 control).		
Oct 24 2020	PrEP	*Goenka et al., SSRN, doi:10.2…*	IgG+, ↓87.2%, p=0.03	Seroprevalence of COVID-19 Amongst Health Care Workers in a Tertiary Care H…
	Details	Study of SARS-CoV-2-IgG antibodies in 1122 health care workers in India finding 87% lower positives for adequate HCQ prophylaxis, 1.3% HCQ versus 1…		
Oct 23 2020	Late	*Coll et al., American Journal …*	death, ↓45.6%, p<0.0001	Covid-19 in transplant recipients: the spanish experience
	Details	Retrospective 652 transplant recipient patients in Spain showing 46% lower mortality for patients treated with HCQ, unadjusted relative risk RR 0.54, *p*<…		
Oct 21 2020	Late	*Lano et al., Clinical Kidney Jo…*	death, ↓33.1%, p=0.28	Risk factors for severity of COVID-19 in chronic dialysis patients from a multice…
	Details	33% lower mortality with HCQ+AZ, *p*=0.28. Retrospective 122 French dialysis patients. 69% lower combined mortality/ICU, *p*=0.11, for the subgroup not …		
Oct 21 2020	Late	*Dubee et al., Clinical Microbi…*	death, ↓46.0%, p=0.21	Hydroxychloroquine in mild-to-moderate COVID-19: a placebo-controlled doubl…
	Details	Small early terminated late stage (60% on oxygen) RCT in France showing 46% lower mortality. mortality at 28 days relative risk RR 0.54 [0.21-1.42] co…		
Oct 21 2020	Late	*Ñamendys-Silva et al., Heart …*	death, ↓32.3%, p=0.18	Outcomes of patients with COVID-19 in the Intensive Care Unit in Mexico: A mu…
	Details	Retrospective 164 ICU patients in Mexico showing 32% lower mortality with HCQ+AZ and 37% lower with CQ. HCQ+AZ vs. neither HCQ or CQ relative ris…		
Oct 20 2020	Early,…	*IHU Marseille (Preprint) (met…*	meta-analysis	Meta-analysis on chloroquine derivatives and COVID-19 mortality
	Details	Updated meta analysis of 41 studies showing CQ/HCQ OR 0.57, *p*<0.0001 from clinical studies. For big data studies authors find inconsistent results a…		
Oct 20 2020	Late	*Solh et al., medRxiv, doi:10.1…*	death, ↑18.0%, p=0.17	Clinical course and outcome of COVID-19 acute respiratory distress syndrome: …
	Details	Retrospective database analysis of 7,816 Veterans Affairs hospitalized patients analyzing progression to ARDS and 30-day mortality from ARDS. Confo…		
Oct 17 2020	Early	*Mohana et al., International J…*	safety analysis	Hydroxychloroquine Safety Outcome within Approved Therapeutic Protocol for…
	Details	Safety study of 2,733 patients in Saudi Arabia showing HCQ in mild to moderate cases in an outpatient setting, within the protocol recommendation an…		
Oct 15 2020	Late	*Guisado-Vasco (Peer Review…*	death, ↓20.3%, p=0.36	Clinical characteristics and outcomes among hospitalized adults with severe …
	Details	Retrospective 607 patients reporting results for early outpatient HCQ use with mortality odds ratio OR 0.092 [0.022-0.381], *p* = 0.001 (65 patients), and f…		
Oct 15 2020	Late	*SOLIDARITY Trial Consortium…*	death, ↑19.0%, p=0.23	Repurposed antiviral drugs for COVID-19; interim WHO SOLIDARITY trial results
	Details	WHO SOLIDARITY open-label trial with 954 very late stage (64% on oxygen/ventilation) HCQ patients, mortality relative risk RR 1.19 [0.89-1.59], *p*=0.23. …		
Oct 12 2020	Late	*Annie et al., Pharmacotherap…*	death, ↓4.3%, p=0.83	Hydroxychloroquine in hospitalized COVID-19 patients: Real world experience …
	Details	Retrospective database analysis with PSM not including COVID-19 severity, finding mortality OR 0.95 [0.62-1.46] for HCQ, and 1.24 [0.70-2.22] for HCQ+…		
Oct 11 2020	Late	*Sili et al., medRxiv, doi:10.1101/2020.10.09.20209775 (Preprint)*		Factors associated with progression to critical illness in 28 days among COVI…
	Details	Analysis of hospitalized patients in Turkey showing HCQ was given to 99.2% of patients and the incidence of critical illness was lower than most studie…		
Oct 8 2020	Late	*Aparisi et al., medRxiv, doi:10…*	death, ↓63.0%, p=0.008	Low-density lipoprotein cholesterol levels are associated with poor clinical out…
	Details	Retrospective 654 hospitalized patients focused on low-density lipoprotein cholesterol levels, also showing results for HCQ with 605 HCQ patients, una…		

Oct 8 2020	Late	*Soto-Becerra et al., medRxiv, …*	death, ↓18.1%, p<0.0001	Real-World Effectiveness of hydroxychloroquine, azithromycin, and ivermectin …
	Details	Retrospective database study of 5683 patients, 692 received HCQ/CQ+AZ, 200 received HCQ/CQ, 203 received ivermectin, 1600 received AZ, 358 receiv…		
Oct 6 2020	Late	*Ader et al., medRxiv, doi:10.1…*	death, ↓6.4%, p=1.00	Antiviral drugs in hospitalized patients with COVID-19 - the DisCoVeRy trial
	Details	Early terminated very late stage (95% on oxygen at baseline) DISCOVERY trial. 4% more patients were on ventilation at baseline in the HCQ group.		
Oct 5 2020	Late	*Mori et al., Journal of Microbiology, Immunology and Infection, doi:…*		Triple therapy with hydroxychloroquine, azithromycin, and ciclesonide for COVI…
	Details	Small case study of 5 patients in Japan showing improvement with HCQ+AZ+ciclesonide.		
Oct 5 2020	Early,…	*Prodromos et al., New Micro…*	meta-analysis	Hydroxychloroquine is effective, and consistently so used early, for Covid-19: A…
	Details	Meta analysis of 43 studies: "HCQ was found consistently effective against COVID-19 when used early, in the outpatient setting. It was found overall eff…		
Oct 2 2020	Late	*Nachega et al., The American…*	death, ↓27.6%, p=0.17	Clinical Characteristics and Outcomes of Patients Hospitalized for COVID-19 in…
	Details	Retrospective 766 hospitalized patients in DRC showing mortality reduced from 29% to 11%, and improvement at 30 days increased from 65% to 84%. …		
Oct 1 2020	Late	*Almazrou et al., Saudi Pharm…*	ventilation, ↓65.0%, p=0.16	Comparing the impact of Hydroxychloroquine based regimens and standard tr…
	Details	Retrospective 161 hospitalized patients in Saudi Arabia showing lower ventilation and ICU admission with HCQ, but not statistically significant with the…		
Oct 1 2020	PrEP, …	*Garcia-Albeniz et al., medRxi…*	cases, ↓22.0%, p=0.04	Brief communication: A meta-analysis of randomized trials of hydroxychloroq…
	Details	Combination of the four underpowered prophylaxis RCTs to date showing statistically significant results, RR 0.78 [0.61-0.99]. The actual effect of HCQ i…		
Sep 30 2020	PrEP	*Yadav et al., ResearchGate, d…*	hosp., ↓82.4%, p=0.01	Sero-survey for health-care workers provides corroborative evidence for the eff…
	Details	ICMR seroprevalence survey of 500 healthcare workers in India, 279 taking HCQ prophylaxis, showing a significantly lower risk with treatment, and low…		
Sep 30 2020	PEP	*Polat et al., Medical Journal …*	cases, ↓57.0%, p=0.03	Hydroxychloroquine Use on Healthcare Workers Exposed to COVID-19 -A Pand…
	Details	Small prophylaxis study of 208 healthcare workers in Turkey, 138 with high risk exposure received HCQ, while 70 with low and medium risk exposure di…		
Sep 30 2020	Late	*Ayerbe et al., Internal and Em…*	death, ↓52.2%, p<0.001	The association of treatment with hydroxychloroquine and hospital mortality i…
	Details	2075 hospital patients in Spain showing HCQ reduces mortality 52%, odds ratio OR 0.39, *p*<0.001, after adjustment for age, gender, temperature > 37 °C,…		
Sep 30 2020	PrEP, …	*Ladapo et al., medRxiv, doi:1…*	cases/death/hosp., ↓24.0%, p=0.03	Randomized Controlled Trials of Early Ambulatory Hydroxychloroquine in the …
	Details	Meta analysis of prophylactic and early treatment RCTs, 24% reduction in cases, hospitalization or death with HCQ, RR 0.76, *p*=0.025. No serious adver…		
Sep 30 2020	PrEP	*Abella et al., JAMA Internal …*	cases, ↓5.0%, p=1.00	Efficacy and Safety of Hydroxychloroquine vs Placebo for Pre-exposure SARS-…
	Details	Very small early-terminated underpowered PrEP RCT with 64/61 HCQ/control patients and only 8 infections, HCQ infection rate 6.3% versus control 6.6…		
Sep 29 2020	Late	*Lammers et al., Int. J. Infecti…*	death/ICU, ↓32.0%, p=0.02	Early hydroxychloroquine but not chloroquine use reduces ICU admission in C…
	Details	Observational study 1,064 hospitalized patients in the Netherlands, 53% reduced risk of transfer to the ICU for mechanical ventilation with HCQ treatme…		
Sep 29 2020	Late	*Dabbous et al., Scientific Reports, doi:10.1038/s41598-021-85227-…*		Safety and efficacy of favipiravir versus hydroxychloroquine in management of…
	Details	Small RCT comparing HCQ and favipiravir, with 50 patients in each arm, finding that 55.1% of HCQ patients were PCR negative on day 7 compared to 4…		
Sep 28 2020	PEP	*Luco, J., Trends Med, doi:10.…*	meta-analysis	Hydroxychloroquine as post-exposure prophylaxis for Covid-19: Why simple d…
	Details	Reanalysis of Boulware et al. PEP trial data showing statistically significant improvements with HCQ.		
Sep 24 2020	Early,…	*Gasperetti et al., EP Europac…*	safety analysis	Arrhythmic safety of hydroxychloroquine in COVID-19 patients from different cl…
	Details	Safety study of 649 patients finding that HCQ administration is safe for short-term treatment for patients with COVID-19 infection regardless of the clini…		
Sep 24 2020	Late	*Shoaibi et al., medRxiv, doi:1…*	death, ↓15.4%, p<0.001	Comparative Effectiveness of Famotidine in Hospitalized COVID-19 Patients
	Details	Retrospective database analysis focused on Famotidine but also showing results for HCQ users, with unadjusted mortality RR 0.85, *p*<0.001 (13.6% vs. …		
Sep 23 2020	Late	*Ulrich et al., Open Forum Infe…*	death, ↑6.0%, p=1.00	Treating Covid-19 With Hydroxychloroquine (TEACH): A Multicenter, Double-Bli…
	Details	Small RCT on very late stage use of HCQ, with 48% on oxygen at baseline. 67 HCQ patients, 61 control. Baseline states were not comparable - 82% mor…		
Sep 22 2020	Late	*Serrano et al., Ann. Oncol., 2…*	death, ↓43.0%, p=0.14	COVID-19 and lung cancer: What do we know?
	Details	Small retrospective study of 22 lung cancer patients, 14 treated with HCQ+AZ, showing HCQ+AZ mortality relative risk RR 0.57, *p* = 0.145.		
Sep 21 2020	PrEP	*Gentry et al., Lancet Rheumat…*	death, ↓91.3%, p=0.10	Long-term hydroxychloroquine use in patients with rheumatic conditions and …
	Details	Retrospective patients with rheumatologic conditions showing zero of 10,703 COVID-19 deaths for HCQ patients versus 7 of 21,406 propensity matche…		
Sep 21 2020	PrEP	*Rajasingham et al., medRxiv,…*	cases, ↓27.0%, p=0.12	Hydroxychloroquine as pre-exposure prophylaxis for COVID-19 in healthcare w…
	Details	PrEP RCT showing HR 0.73, *p* = 0.12. Trial halted after 47% enrollment, *p* < 0.05 will be reached at ~75% enrollment if similar results continue. Trial halt…		
Sep 21 2020	PrEP	*Grau-Pujol et al., Research S…*	cases, ↓67.9%, p=0.47	Pre-exposure prophylaxis with hydroxychloroquine for COVID-19: initial results …
	Details	Small PrEP RCT showing that PrEP with HCQ is safe at the dosage used. No deaths, hospitalizations, or serious adverse events. With only one case (in t…		
Sep 21 2020	Early	*Lofgren et al., Open Forum In…*	safety analysis	Safety of Hydroxychloroquine among Outpatient Clinical Trial Participants for …
	Details	Analysis of 2,795 outpatients not showing significant safety concerns with HCQ. No deaths were related to HCQ. There was one serious event requiring …		
Sep 18 2020	Late	*Axfors et al., Nature, doi:10.1…*	meta-analysis	Mortality outcomes with hydroxychloroquine and chloroquine in COVID-19 fro…
	Details	Meta analysis assigning 89% weight to the RECOVERY and SOLIDARITY trials, producing the same result. These trials used excessively high non-patien…		

Sep 16 2020	N/A	*Karatza et al., Xenobiotica (P…*	dosing study	Optimization of hydroxychloroquine dosing scheme based on COVID-19 patien…
	Details	Analysis of HCQ dosing, suggesting that high initial doses followed by low and sparse doses may offer significant benefits to patients by decreasing th…		
Sep 15 2020	Late	*Ashinyo et al., Pan African M…*	hosp. time, ↓33.0%, p=0.03	Clinical characteristics, treatment regimen and duration of hospitalization amo…
	Details	Retrospective 307 hospital patients in Ghana showing 33% reduction in hospitalization time with HCQ, 29% reduction with HCQ+AZ, and 37% reduction…		
Sep 14 2020	Late	*Lauriola et al., Clinical and Tr…*	death, ↓73.5%, p<0.001	Effect of combination therapy of hydroxychloroquine and azithromycin on mor…
	Details	Retrospective 377 patients, 73% reduction in mortality with HCQ+AZ, adjusted hazard ratio HR 0.27 [0.17-0.41]. Mean age 71.8. No serious adverse eve…		
Sep 13 2020	Early	*Sulaiman et al., medRxiv, doi:…*	death, ↓63.7%, p=0.01	The Effect of Early Hydroxychloroquine-based Therapy in COVID-19 Patients in…
	Details	Observational prospective 5,541 patients, adjusted HCQ mortality odds ratio OR 0.36, *p* = 0.012. Adjusted hospitalization OR 0.57, *p* < 0.001. Zinc suppl…		
Sep 12 2020	Late	*Heberto et al., IJC Heart & Va…*	death, ↓53.6%, p=0.04	Implications of myocardial injury in Mexican hospitalized patients with corona…
	Details	Observational prospective 254 hospitalized patients, HCQ+AZ mortality odds ratio OR 0.36, *p* = 0.04. Ventilation OR 0.20, *p* = 0.008.		
Sep 9 2020	Late	*Alamdari et al., Tohoku J. Ex…*	death, ↓55.0%, p=0.03	Mortality Risk Factors among Hospitalized COVID-19 Patients in a Major Refer…
	Details	Retrospective 459 patients in Iran 93% using HCQ, showing HCQ mortality RR 0.45, *p* = 0.028. HCQ was the only antiviral that showed a significant diffe…		
Sep 9 2020	Early,…	*Kirenga et al., BMJ Open Res…*	recov. time, ↓25.6%, p=0.20	Characteristics and outcomes of admitted patients infected with SARS-CoV-2 i…
	Details	Prospective 56 patients in Uganda, 29 HCQ and 27 control, showing 25.6% faster recovery with HCQ, 6.4 vs. 8.6 days (*p* = 0.20). There was no ICU admi…		
Sep 9 2020	PrEP	*Rentsch et al., The Lancet Rh…*	death, ↑3.0%, p=0.83	Effect of pre-exposure use of hydroxychloroquine on COVID-19 mortality: a pop…
	Details	Observational database study of RA/SLE patients in the UK, 194,637 RA/SLE patients with 30,569 having >= 2 HCQ prescriptions in the prior 6 months, …		
Sep 9 2020	PrEP	*Laplana et al., PLOS ONE, doi…*	cases, ↑56.0%, p=0.24	Lack of protective effect of chloroquine derivatives on COVID-19 disease in a S…
	Details	Survey of 319 autoimmune disease patients taking CQ/HCQ with 5.3% COVID-19 incidence, compared to a control group from the general population (…		
Sep 7 2020	Revie…	*IHU, Expert Review of Clinical…*	review	Natural history and therapeutic options for COVID-19
	Details	Review of the current state of knowledge regarding the natural history of and therapeutic options for COVID-19. Treatment with an oral combination of …		
Sep 5 2020	Late	*Synolaki et al., medRxiv, doi:…*	death, ↓23.6%, p=0.27	The Activin/Follistatin-axis is severely deregulated in COVID-19 and independe…
	Details	Retrospective 117 patients, 58 HCQ showing lower mortality for HCQ patients. Version 1 of this paper stated: "HCQ, AZ, [and ...] were found to be indepe…		
Sep 4 2020	Late	*Furtado et al., The Lancet, doi:10.1016/S0140-6736(20)31862-6 (Pe…*		Azithromycin in addition to standard of care versus standard of care alone in t…
	Details	Small RCT comparing the addition of AZ for very late stage patients on ventilation or oxygen. No significant difference was found, OR 1.36, *p*=0.11. One…		
Sep 2 2020	In Vit…	*Wang et al., Phytomedicine, …*	*in vitro*	Chloroquine and hydroxychloroquine as ACE2 blockers to inhibit viropexis of 2…
	Details	*In Vitro* study providing novel insights into the molecular mechanism of CQ/HCQ treatment, showing that CQ and HCQ both inhibit the entrance of 2019…		
Sep 2 2020	Early	*Heras et al., European Geriatr…*	death, ↓95.6%, p=0.004	COVID-19 mortality risk factors in older people in a long-term care center
	Details	Retrospective 100 elderly nursing home patients, HCQ+AZ mortality 11.4% vs. control 61.9%, RR 0.18, *p*<0.001. Median age 85. COVID-19 confirmed. 70…		
Sep 2 2020	PrEP	*de la Iglesia et al., medRxiv, …*	hosp., ↑50.0%, p=1.00	Hydroxicloroquine for pre-exposure prophyylaxis for SARS-CoV-2
	Details	Analysis of autoimmune disease patients on HCQ, compared to a control group from the general population (matched on age and sex, but not adjusted…		
Sep 1 2020	Revie…	*Hecel et al., Pharmaceuticals,…*	review	Zinc(II)—The Overlooked Éminence Grise of Chloroquine's Fight against COVID-…
	Details	Review of zinc as an inhibitor of SARS-CoV-2's RNA-dependent RNA polymerase, and zinc ionophores including CQ/HCQ, showing the latest evidence fo…		
Sep 1 2020	Early	*Elbazidi et al., New Microbes and New Infections, doi:10.1016/j.nm…*		Pandemic and social changes, political fate
	Details	Analysis of US states and countries. Country analysis shows a significant correlation between the dates of decisions to adopt/decline HCQ, and corresp…		
Aug 30 2020	Late	*Albani et al., J, Clinical Medic…*	death, ↓18.4%, p=0.05	Impact of Azithromycin and/or Hydroxychloroquine on Hospital Mortality in C…
	Details	Retrospective 1376 hospitalized patients in Italy, 211 treated with HCQ and 166 with HCQ+AZ.		
Aug 29 2020	Late	*Castillo et al., Journal of Steroid Biochemistry and Molecular Biolog…*		Effect of calcifediol treatment and best available therapy versus best available …
	Details	RCT on calcifediol (25-hydroxyvitamin D) treatment for hospitalized COVID-19 patients showing significantly reduced intensive care unit admissions. Al…		
Aug 28 2020	Late	*Fried et al., Clinical Infectious…*	death, ↑27.0%, p<0.001	Patient Characteristics and Outcomes of 11,721 Patients with COVID19 Hospit…
	Details	Database analysis of 11,721 hospitalized patients, 4,232 on HCQ. Strong evidence for confounding by indication and compassionate use of HCQ. 24.9…		
Aug 27 2020	PrEP	*Ferri at al., Clinical Rheumato…*	cases, ↓63.0%, p=0.01	COVID-19 and rheumatic autoimmune systemic diseases: report of a large Itali…
	Details	Analysis of 1641 systemic autoimmune disease patients showing csDMARD (HCQ etc.) RR 0.37, *p*=0.015. csDMARDs include HCQ, CQ, and several oth…		
Aug 26 2020	Late	*Fiolet et al., Clinical Microbio…*	meta-analysis	Effect of hydroxychloroquine with or without azithromycin on the mortality of …
	Details	Meta analysis of late stage studies (and one early treatment study with only 2 deaths), showing HCQ RR 0.83 [0.65-1.06], before exclusions RR 0.80 [0.…		
Aug 25 2020	Early	*Ip et al., BMC Infectious Dise…*	death, ↓54.5%, p=0.43	Hydroxychloroquine in the treatment of outpatients with mildly symptomatic C…
	Details	Retrospective 1,274 outpatients, 47% reduction in hospitalization with HCQ with propensity matching, HCQ OR 0.53 [0.29-0.95]. Sensitivity analyses rev…		
Aug 25 2020	Late	*Di Castelnuovo et al., Europe…*	death, ↓30.0%, p<0.0001	Use of hydroxychloroquine in hospitalised COVID-19 patients is associated wit…
	Details	Retrospective 3,451 hospitalized patients, 30% reduction in mortality with HCQ after propensity adjustment, HR 0.70 [0.59 - 0.84].		

Aug 24 2020	Late	*Catteau et al., Int. J. Antimicr…*	death, ↓32.0%, p<0.0001	Low-dose Hydroxychloroquine Therapy and Mortality in Hospitalized Patients …
	Details	Retrospective 8,075 hospitalized patients, 4,542 low-dose HCQ, 3,533 control. 35% lower mortality for HCQ (17.7% vs. 27.1%), adjusted HR 0.68 [0.62–0…		
Aug 23 2020	Late	*Pasquini et al., Journal of An…*	death, ↓16.4%, p=0.34	Effectiveness of remdesivir in patients with COVID-19 under mechanical ventil…
	Details	Retrospective 51 ICU patients under mechanical ventilation, 33 treated with HCQ, showing unadjusted lower mortality with treatment.		
Aug 21 2020	Early	*Ly et al., International Journal…*	death, ↓55.6%, p=0.02	Pattern of SARS-CoV-2 infection among dependant elderly residents living in re…
	Details	Retrospective analysis of retirement homes, HCQ+AZ >= 3 days mortality OR 0.37, *p*=0.02. 1690 elderly residents (mean age 83), 226 infected residents,…		
Aug 21 2020	N/A	*Lane et al., The Lancet Rheu…*	safety analysis	Risk of hydroxychloroquine alone and in combination with azithromycin in the …
	Details	Retrospective study of RA patients using HCQ vs. sulfasalazine (another DMARD). HCQ treatment showed no increased risk in the short term (up to 30 d…		
Aug 21 2020	Late	*Gonzalez et al., medRxiv, doi:…*	death, ↓26.6%, p=0.06	The Prognostic Value of Eosinophil Recovery in COVID-19: A Multicentre, Retro…
	Details	Retrospective study focused on eosinophil recovery with 9,644 hospitalized patients in Spain, showing lower mortality for HCQ (14.7% vs 29.2%, *p*<0.00…		
Aug 20 2020	Late	*Dubernet et al., J. Global Anti…*	ICU, ↓87.6%, p=0.008	A comprehensive strategy for the early treatment of COVID-19 with azithromyci…
	Details	Retrospective analysis of 36 hospitalized patients showing HCQ/AZ associated with lower ICU admission, *p*=0.008. Median age 66, no mortality. Confo…		
Aug 20 2020	Early	*Prodromos, C., New Microbe…*	safety analysis	Hydroxychloroquine is protective to the heart, not harmful: A systematic review
	Details	Review concluding that HCQ/AZ does not cause Torsade de Pointes or related deaths, HCQ decreases cardiac events, and HCQ should not be restricted …		
Aug 18 2020	Late	*Pinato et al., Cancer Discover…*	death, ↓59.0%, p<0.0001	Clinical portrait of the SARS-CoV-2 epidemic in European cancer patients
	Details	Restrospective 890 cancer patients with COVID-19, adjusted mortality HR for HCQ/CQ 0.41, *p*<0.0001. Confirmed SARS-CoV-2 infection was required, w…		
Aug 15 2020	Late	*Peters et al., Clinical Microbi…*	death, ↑9.0%, p=0.57	Outcomes of Persons With COVID-19 in Hospitals With and Without Standard …
	Details	Retrospective study of HCQ use in 9 hospitals in the Netherlands, showing no significant difference in mortality with HCQ/CQ or dexamethasone. Late s…		
Aug 14 2020	Late	*Abd-Elsalam et al., American …*	death, ↑20.0%, p=1.00	Hydroxychloroquine in the Treatment of COVID-19: A Multicenter Randomized …
	Details	Small RCT in Egypt with 97/97 HCQ/control patients, showing 58% more recovery @28days for HCQ (53.6% HCQ, 34% control), *p*=0.009 (0.06 in the pa…		
Aug 13 2020	Late	*Roomi et al., J. Medical Inter…*	death, ↑37.7%, p=0.54	Efficacy of hydroxychloroquine and tocilizumab in patients with COVID-19: A si…
	Details	Retrospective 176 hospitalized patients (144 HCQ, 32 control) showing no significant differences with HCQ or TCZ. Confounding by indication.		
Aug 11 2020	In Sili…	*Tarek et al., European Journal of Drug Metabolism and Pharmacoki…*		Pharmacokinetic Basis of the Hydroxychloroquine Response in COVID-19: Impl…
	Details	*In Silico* analysis of HCQ treatment showing concluding that HCQ may affect viral clearance if administered early enough when the virus is still confine…		
Aug 11 2020	Early	*Bakhshaliyev et al., J. Electro…*	safety analysis	The effect of 5-day course of hydroxychloroquine and azithromycin combinati…
	Details	Safety study of 109 patients showing 5 days of HCQ+AZ did not lead to clinically significant QT prolongation or other conduction delays compared to b…		
Aug 11 2020	Late	*Saleemi et al., medRxiv, doi:1…*	viral- time, ↑21.0%, p<0.05	Time to negative PCR from symptom onset in COVID-19 patients on Hydroxyc…
	Details	Retrospective 65 HCQ+AZ, 20 control patients, showing median time to negative PCR of 23 days for HCQ+AZ vs. 19 days for control. Confounding by in…		
Aug 8 2020	Late	*Lopez et al., Int. J. Antimicrob. Agents, doi:/j.ijantimicag.2020.1061…*		Effects of Hydroxychloroquine on Covid-19 in Intensive Care Unit Patients: Prel…
	Details	Small retrospective study of 29 ICU patients comparing those with HCQ plasma concentration within target to those with a concentration below the tar…		
Aug 6 2020	PrEP	*Salvarani et al., Arthritis & Rh…*	cases, ↓6.0%, p=0.75	Susceptibility to COVID-19 in Patients Treated With Antimalarials: A Populatio…
	Details	Comparison of CQ/HCQ users with the general population in a region of Italy, showing no significant difference in the probability of COVID-19. CQ/HCQ …		
Aug 6 2020	Revie…	*McCullough et al., The Ameri…*	review	Pathophysiological Basis and Rationale for Early Outpatient Treatment of SAR…
	Details	Review of pathophysiological principles related to early outpatient treatment and therapeutic approaches including reduction of reinoculation, combina…		
Aug 6 2020	PEP, …	*Watanabe et al., Open Letter …*	meta-analysis	Concerns regarding the misinterpretation of statistical hypothesis testing in cli…
	Details	Open letter signed by 38 professors and doctors regarding misinterpretation of statistics in HCQ RCTs. Authors note [1] that data from RCTs for early tre…		
Aug 5 2020	PrEP	*Singer et al., Annals of the Rh…*	cases, ↑9.0%, p=0.62	Hydroxychloroquine ineffective for COVID-19 prophylaxis in lupus and rheumat…
	Details	Comparison of the percentage of SLE/RA patients on immunosuppressants that were taking HCQ, for COVID-19 diagnosis versus other infections or out…		
Aug 5 2020	Late	*Kalligeros et al., Journal of G…*	death, ↑67.0%, p=0.57	Hydroxychloroquine use in hospitalised patients with COVID-19: An observatio…
	Details	Small retrospective database analysis of 36 patients receiving HCQ not showing significant differences. Confounding by indication is likely.		
Aug 4 2020	Late	*Kamran et al., medRxiv, doi:1…*	progression, ↓5.0%, p=1.00	Clearing the fog: Is HCQ effective in reducing COVID-19 progression: A randomi…
	Details	Study of 349 low-risk hospitalized patients with 151 non-consenting or ineligible patients used as controls. SOC included zinc, vitamin C and vitamin D.…		
Aug 3 2020	Late	*Berenguer et al., Clinical Micr…*	death, ↓61.9%, p<0.0001	Characteristics and predictors of death among 4035 consecutively hospitalize…
	Details	Retrospective 4035 hospitalized patients in Spain showing reduced mortality with HCQ (data is in the supplementary appendix).		
Aug 3 2020	Late	*Yu et al., Science China Life S…*	progression, ↓82.5%, p=0.05	Beneficial effects exerted by hydroxychloroquine in treating COVID-19 patients …
	Details	Retrospective 2,882 patients in China, median age 62, 278 receiving HCQ, median 10 days post hospitalization, showing that HCQ treatment can reduc…		
Aug 2 2020	Late	*Davido et al., Int. J. Antimicr…*	int./hosp., ↓55.0%, p=0.04	Impact of medical care including anti-infective agents use on the prognosis of …
	Details	Retrospective of 132 hospitalized patients. HCQ+AZ(52)/AZ(28) significantly reduced death/ICU, HR=0.45, *p*=0.04. Adjusted for Charlson Comorbidity I…		

Aug 2 2020	In Vit…	*Sheaff, R., bioRxiv, doi:10.11…*	*in vitro*	A New Model of SARS-CoV-2 Infection Based on (Hydroxy)Chloroquine Activity
	Details	*In Vitro* study presenting a new theory on SARS-CoV-2 infection and why HCQ/CQ provides benefits, which potentially explains the observed relationshi…		
Aug 1 2020	Early	*Bernabeu-Wittel et al., J. Ger…*	death, ↓59.0%, p=0.03	Effectiveness of a On-Site Medicalization Program for Nursing Homes with CO…
	Details	Retrospective 272 nursing home residents showing significantly improved survival after establishing a treatment program including HCQ with or witho…		
Jul 31 2020		*Mazzitelli et al., Travel Medicine and Infectious Disease, 37, doi:10.1…*		Apparent inefficacy of hydroxychloroquine combined with azithromycin on SA…
	Details	Report on HCQ+AZ use in 41 elderly high-risk patients. 29 of 30 patients with treatment >= 5 days survived. Only 10% were PCR negative after one week…		
Jul 29 2020	Late	*D'Arminio Monforte et al., Int.…*	death, ↓34.0%, p=0.12	Effectiveness of Hydroxychloroquine in COVID-19 disease: A done and dusted …
	Details	HCQ+AZ adjusted death HR 0.44, *p*=0.009. Propensity scores include baseline COVID-19 disease severity, age, gender, number of comorbidities, cardio-…		
Jul 28 2020	Late	*BaŞaran et al., Turk. J. Med. Sci., doi:10.3906/sag-2006-173 (Peer R…*		Outcome of Non-Critical COVID-19 Patients with Early Hospitalization and Earl…
	Details	Observational study of 174 hospitalized patients in Turkey, median age 45.4, 23 treated with HCQ, 113 with HCQ+AZ, and 32 with regimens including fa…		
Jul 26 2020	PEP	*Mitjà et al., NEJM, doi:10.10…*	death, ↓51.7%, p=0.27	A Cluster-Randomized Trial of Hydroxychloroquine as Prevention of Covid-19 …
	Details	Death rate reduced from 0.6% to 0.4%, RR 0.68, not statistically significant due to low incidence (8 control cases, 5 treatment cases). For positive sympt…		
Jul 24 2020	PrEP	*Khurana et al., medRxiv, doi:…*	cases, ↓51.0%, p=0.02	Prevalence and clinical correlates of COVID-19 outbreak among healthcare wo…
	Details	Study of hospital health care workers showing HCQ prophylaxis reduces COVID-19 significantly, OR 0.30, *p*=0.02. 94 positive health care workers with a…		
Jul 23 2020	Late	*Cavalcanti et al., NEJM, July …*	death, ↓16.0%, p=0.77	Hydroxychloroquine with or without Azithromycin in Mild-to-Moderate Covid-19
	Details	Late stage RCT of 667 hospitalized patients with up to 14 days of symptoms at enrollment and receiving up to 4 liters per minute supplemental oxygen,…		
Jul 22 2020	PrEP	*Kadnur et al., SSRN, doi:10.2…*	cases, ↓86.3%, p=0.03	Hydroxychloroquine Pre-Exposure Prophylaxis for COVID-19 Among Healthcar…
	Details	Prophylaxis study with 334 low-risk healthcare workers in India, showing significantly lower risk of cases with treatment. Symptomatic patients receive…		
Jul 22 2020	In Vit…	*Ou et al., PLOS Pathogens, d…*	*in vitro*	Hydroxychloroquine-mediated inhibition of SARS-CoV-2 entry is attenuated by …
	Details	*In Vitro* analysis showing that HCQ efficiently blocks viral entry mediated by cathepsin L, but not by TMPRSS2, and that a combination of HCQ and a T…		
Jul 22 2020	In Vit…	*Hoffmann et al., Nature, (202…*	*in vitro*	Chloroquine does not inhibit infection of human lung cells with SARS-CoV-2
	Details	The title of this paper does not appear to match the results. Fig. 1b @100uM shows CQ results in a ~4.5 fold decrease (on a linear scale) in extracellula…		
Jul 22 2020	Late	*Rivera et al., Cancer Discover…*	death, ↑2.4%, p=0.90	Utilization of COVID-19 Treatments and Clinical Outcomes among Patients wit…
	Details	Retrospective cancer patients, showing adjusted OR 1.03 [0.62-1.73] for HCQ. The study reports the number of HCQ+AZ patients but they do not provid…		
Jul 22 2020	Late	*Kelly et al., British Journal of …*	death, ↑143.0%, p=0.03	Clinical outcomes and adverse events in patients hospitalised with COVID-19, …
	Details	Retrospective 82 hospitalized patients HCQ/AZ, 52 SOC, not finding statistically significant differences. Confounding by indication - authors note that t…		
Jul 21 2020	Late	*Bernaola et al., medRxiv, doi:…*	death, ↓17.0%, p<0.0001	Observational Study of the Efficiency of Treatments in Patients Hospitalized wi…
	Details	HCQ HR 0.83 [0.77-0.89] based on propensity score matched retrospective analysis of 1,645 hospitalized patients. Prednisone HR 0.85 [0.82-0.88], 14 o…		
Jul 20 2020	Late	*Krishnan et al., J Clin Anesth…*	death, ↓20.4%, p=0.48	Clinical comorbidities, characteristics, and outcomes of mechanically ventilate…
	Details	Retrospective 152 mechanically ventilated patients in the USA showing unadjusted lower mortality with vitamin C, vitamin D, HCQ, and zinc treatment, …		
Jul 20 2020	PrEP	*Desbois et al., Research Squa…*	cases, ↓16.9%, p=1.00	Prevalence and clinical features of COVID-19 in a large cohort of 199 patients …
	Details	Retrospective 199 sarcoidosis patients showing non-statistically significant HCQ RR 0.83, *p*=1.0.		
Jul 20 2020	Early	*Risch, H., American Journal …*	meta-analysis	Response to: "Early Outpatient Treatment of Symptomatic, High-Risk Covid-19 …
	Details	Updated meta analysis including 7 new studies of high-risk outpatients, for a total of 12 studies, all showing significant benefit.		
Jul 18 2020	PEP	*Watanabe, M., arXiv.org, arXi…*	meta-analysis	Efficacy of Hydroxychloroquine as Prophylaxis for Covid-19
	Details	Secondary analysis of Boulware et al.'s PEP trial and treatment delay-response data, confirming that HCQ is effective when used early, *p*<0.01. The effec…		
Jul 19 2020	Late	*McGrail et al., medRxiv, doi:1…*	death, ↑70.0%, p=0.69	COVID-19 Case Series at UnityPoint Health St. Luke's Hospital in Cedar Rapids, …
	Details	HCQ+AZ early in the epidemic had a fairly good success rate with few complications, 86% of HCQ patients survived and 92% of HCQ+AZ patients. Patie…		
Jul 17 2020	Late	*Lyngbakken et al., Nature Co…*	death, ↓3.7%, p=1.00	A pragmatic randomized controlled trial reports lack of efficacy of hydroxychlo…
	Details	Small RCT of nasopharyngeal viral load not showing significant differences. The rate of reduction for HCQ was 0.24 [0.03-0.46] RNA copies/mL/24h, an…		
Jul 16 2020	Early	*Hong et al., Infect. Chemothe…*	viral+, ↓64.9%, p=0.001	Early Hydroxychloroquine Administration for Rapid Severe Acute Respiratory S…
	Details	HCQ 1-4 days from diagnosis was the only protective factor against prolonged viral shedding found, OR 0.111, *p*=0.001. 57.1% viral clearance with 1-4 …		
Jul 16 2020	Early	*Skipper et al., Annals of Inter…*	hosp./death, ↓36.7%, p=0.58	Hydroxychloroquine in Nonhospitalized Adults With Early COVID-19: A Rando…
	Details	~70 to 140 hour (inc. shipping) delayed outpatient treatment with HCQ showing lower hospitalization/death and faster recovery, but not reaching statis…		
Jul 16 2020	Early	*Mitjà et al., Clinical Infectiou…*	hosp., ↓16.0%, p=0.64	Hydroxychloroquine for Early Treatment of Adults with Mild Covid-19: A Rando…
	Details	This paper has conflicting values, table S2 shows 12 control hospitalizations, while table 2 shows 11. The original report for this paper had more confli…		
Jul 15 2020	Late	*Gupta et al., JAMA Intern. M…*	death, ↑6.0%, p=0.41	Factors Associated With Death in Critically Ill Patients With Coronavirus Diseas…
	Details	Analysis of 2215 intensive care unit patients showing no significant differences with this very late stage use of HCQ. HCQ+AZ mortality relative risk RR …		

Jul 15 2020	N/A	*Kavanagh* et al., Med. Hypot…	dosing study	Inhaled hydroxychloroquine to improve efficacy and reduce harm in the treatm…
	Details	Proposal to use an inhaled formulation of HCQ which has passed safety studies in clinical trials for the treatment of asthma. Authors advocate for early…		
Jul 14 2020	Late	*Trullàs* et al., Research Squar…	death, ↓35.6%, p=0.12	High in-hospital mortality due to COVID-19 in a community hospital in Spain: a…
	Details	Retrospective 100 hospitalized patients in Spain showing lower mortality with HCQ+AZ.		
Jul 14 2020	Early	*Chowdhury* et al., Eurasian Journal of Medicine and Oncology, doi:1…		A Randomized Trial of Ivermectin-Doxycycline and Hydroxychloroquine-Azithr…
	Details	Small 116 patient RCT comparing ivermectin+doxycycline and HCQ+AZ, not showing a significant difference in time to PCR negative or symptom resol…		
Jul 11 2020	Late	*Lecronier* et al., Critical Care, …	death, ↓42.0%, p=0.24	Comparison of hydroxychloroquine, lopinavir/ritonavir, and standard of care in …
	Details	Retrospective 80 ICU patients, 22 SOC, 20 lopinavir/ritonavir, 38 HCQ. 28 day mortality 24% (HCQ) versus 41% (SOC), a 41% decrease, but not statistical…		
Jul 10 2020	Late	*Cravedi* et al., American Jour…	death, ↑53.0%, p=0.17	COVID-19 and kidney transplantation: Results from the TANGO International Tr…
	Details	Analysis of 144 hospitalized kidney transplant patients showing HCQ mortality HR 1.53, *p* = 0.17. Subject to confounding by indication.		
Jul 10 2020	Late	*Chen* et al., PLoS ONE, doi:10…	viral+, ↓24.0%, p=0.71	A Multicenter, randomized, open-label, controlled trial to evaluate the efficacy a…
	Details	2 very small studies with hospitalized patients in Taiwan. RCT with 21 treatment and 12 SOC patients. No mortality, or serious adverse effects. Median …		
Jul 9 2020	Late	*Rivera-Izquierdo* et al., Medic…	death, ↓19.0%, p=0.75	Agentes terapéuticos utilizados en 238 pacientes hospitalizados por COVID-19…
	Details	Retrospective 238 hospitalized patients in Spain showing lower mortality with HCQ, adjusted hazard ratio aHR 0.81 [0.24-2.76].		
Jul 9 2020	Early,…	*Raoult* et al., Preprint (Prepri…	meta-analysis	Hydroxychloroquine and Azithromycin as a Treatment of COVID-19: Results of …
	Details	Updated meta analysis showing significant reductions in mortality and viral shedding. Mortality OR 0.53 [0.4-0.71] for clinical studies, 0.92 big data stu…		
Jul 8 2020	N/A	*Marzolini* et al., Antimicrobial…	dosing study	Effect of Systemic Inflammatory Response to SARS-CoV-2 on Lopinavir and Hy…
	Details	Study of Lopinivar and HCQ plasma concentrations and CRP levels in late stage (treatment initiation median 8 days from onset) COVID-19 patients. Th…		
Jul 8 2020	Revie…	*Li* et al., Cell Death & Disease …	review	Is hydroxychloroquine beneficial for COVID-19 patients?
	Details	Review of the anti-inflammatory, antiviral, and protective vascular effects of CQ and HCQ, noting that HCQ may be preferable for COVID-19 due to fewer …		
Jul 7 2020	Revie…	*Goldstein*, L., Preprint, July 7,…	review	Hydroxychloroquine-based COVID-19 Treatment, A Systematic Review of Clinic…
	Details	85% of globally surveyed physicians recognized HCQ as at least partially effective in treating COVID-19, according to Sermo W3. More than half of the s…		
Jul 7 2020	Late	*An* et al., medRxiv, doi:10.11…	viral+, ↓3.0%, p=0.92	Treatment Response to Hydroxychloroquine and Antibiotics for mild to modera…
	Details	Retrospective of hospitalized patients with 31 HCQ patients and 195 standard treatment patients, not showing a significant difference in terms of viral …		
Jul 3 2020	PrEP	*Zhong* et al., Lancent Rheum…	cases, ↓91.0%, p=0.04	COVID-19 in patients with rheumatic disease in Hubei province, China: a multic…
	Details	Rheumatic disease patients on HCQ had a lower risk of COVID-19 than those on other disease-modifying anti-rheumatic drugs, OR 0.09 (0.01–0.94), *p*=…		
Jul 1 2020	Late	*Arshad* et al., Int. J. Infect. Di…	death, ↓51.3%, p=0.009	Treatment with Hydroxychloroquine, Azithromycin, and Combination in Patient…
	Details	HCQ decreases mortality from 26.4% to 13.5% (HCQ) or 20.1% (HCQ+AZ). Propensity matched HCQ HR 0.487, *p*=0.009. Michigan 2,541 patients retrosp…		
Jul 1 2020	N/A	*Samuel* et al., Heart Rhythm, …	safety analysis	Incidence of arrhythmias and electrocardiographic abnormalities in symptoma…
	Details	In pediatric patients with PCR positive active COVID-19 infection, significant arrhythmias are infrequent, but occur at an incidence higher than expected …		
Jun 30 2020	Late	*Martinez-Lopez* et al., Blood …	death, ↓33.0%, p=0.20	Multiple Myeloma and SARS-CoV-2 Infection: Clinical Characteristics and Prog…
	Details	Retrospective 167 multiple myeloma patients in Spain.		
Jun 30 2020	Late	*Mikami* et al., J. Gen. Intern. …	death, ↓47.0%, p<0.0001	Risk Factors for Mortality in Patients with COVID-19 in New York City
	Details	HCQ decreases mortality, HR 0.53 (CI 0.41–0.67). IPTW adjustment does not significantly change HR 0.53 (0.41-0.68). Retrospective 6,000 patients in N…		
Jun 30 2020	Late	*Komissarov* et al., medRxiv, …	viral load, ↑25.0%, p=0.45	Hydroxychloroquine has no effect on SARS-CoV-2 load in nasopharynx of pati…
	Details	Small late stage (7-10 days post symptoms) study of nasal swab RNA with 12 control and 33 patients, showing no significant differences (significant r…		
Jun 29 2020	Late	*Sosa-García* et al., Cir Cir. 20…	death, ↑10.5%, p=1.00	Experience in the management of severe COVID-19 patients in an intensive car…
	Details	Small retrospective study of 56 ICU patients in Mexico showing HCQ RR 1.1, *p* = 1.0.		
Jun 29 2020	PrEP	*Ferreira* et al., J. Medical Viro…	cases, ↓47.1%, p<0.0001	Chronic treatment with hydroxychloroquine and SARS-CoV-2 infection
	Details	Chronic treatment with HCQ provides protection against COVID, odds ratio 0.51 (0.37-0.70). The actual benefit is likely to be larger becasue research sh…		
Jun 29 2020	N/A	*Mfeukeu-Kuate* et al. (Preprint)	safety analysis	Electrocardiographic safety of daily Hydroxychloroquine 400mg plus Azithrom…
	Details	No life-threatening modifications of the QT interval was observed in non-severe COVID-19 patients treated ambulatory with HCQ+AZ. 51 relatively youn…		
Jun 25 2020	PrEP	*Gendebien* et al., Annals of th…	cases, ↓3.9%, p=0.93	Systematic analysis of COVID-19 infection and symptoms in a systemic lupus …
	Details	Small study of 152 SLE patients taking HCQ with a phone survey for COVID-19 suggestive symptoms. There was 2 hospitalizations (group not identifie…		
Jun 25 2020	Late	*Lagier* et al., Travel Med. Infe…	death, ↓59.0%, p=0.05	Outcomes of 3,737 COVID-19 patients treated with hydroxychloroquine/azithro…
	Details	Early treatment leads to significantly better clinical outcome and faster viral load reduction. Matched sample mortality HR 0.41 p-value 0.048. Retrospe…		
Jun 23 2020	Late	*Bousquet* et al., Aging, 12:12,…	death, ↓42.8%, p=0.15	ADL-dependency, D-Dimers, LDH and absence of anticoagulation are independ…
	Details	Observational prospective 108 hospitalized patients 65 and older, showing HCQ mortality OR 0.49, *p* = 0.15.		

Jun 22 2020	Safety	*Isaksen et al., medRxiv, doi:1…*	safety analysis	Chloroquine, but not hydroxychlorquine, prolongs the QT interval in a primary c…
	Details	Safety analysis in patients without COVID-19, finding a small increase in QTc associated with use of CQ, but not HCQ. Authors also study mortality (n=3…		
Jun 22 2020	Late	*Fontana et al., Clinical Kidne…*	death, ↓50.0%, p=0.53	SARS-CoV-2 infection in dialysis patients in northern Italy: a single-centre expe…
	Details	Very small observational study of 15 dialysis patients showing HCQ mortality RR 0.50, p = 0.53.		
Jun 22 2020	Early	*Chen et al., medRxiv, doi:10.1…*	viral- time, ↓72.0%, p=0.01	Efficacy and safety of chloroquine or hydroxychloroquine in moderate type of …
	Details	Significantly faster clinical recovery and shorter time to RNA negative (from 7.0 days to 2.0 days (HCQ), p=0.01. 67 patients with mild/moderate cases.		
Jun 21 2020	Late	*Faíco-Filho et al., Braz J Micr…*	viral rate, ↓80.8%, p=0.40	No benefit of hydroxychloroquine on SARS-CoV-2 viral load reduction in non-cr…
	Details	Viral load comparison for 34 HCQ and 32 control patients hospitalized with moderate COVID-19. All patients recovered limiting the room for beneficial e…		
Jun 19 2020	PrEP	*SMSH Sawai Man Singh Hos…*	news	HCQ beneficial as preventive drug: SMS doctors told ICMR
	Details	PrEP with 4,300 very high risk healthcare workers in a hospital with up to 500+ COVID patients at a time, only 1% cases, all recovered.		
Jun 19 2020	Late	*NIH, study not available yet (…*	news	NIH halts clinical trial of hydroxychloroquine
	Details	NIH halts late stage trial reporting no harm and no benefit. 470 patients.		
Jun 19 2020	Late	*Sbidian et al., medRxiv, doi:1…*	death, ↑5.0%, p=0.74	Hydroxychloroquine with or without azithromycin and in-hospital mortality or …
	Details	Retrospective of 4,642 hospitalized patients in France showing significantly faster discharge with HCQ and HCQ+AZ. No significant effect is seen on 28…		
Jun 19 2020	Anim…	*Kaptein et al., bioRxiv, doi:10.…*	animal study	Favipiravir at high doses has potent antiviral activity in SARS-CoV-2–infected …
	Details	Animal study with Syrian hamsters, showing treatment of SARS-CoV-2-infected hamsters with favipiravir or HCQ (with and without AZ). Treatment with …		
Jun 18 2020	Late	*Paccoud et al., Clinical Infect…*	death, ↓11.0%, p=0.88	Compassionate use of hydroxychloroquine in clinical practice for patients with…
	Details	Retrospective of 89 hospitalized patients, survival HR 0.89 [0.23-3.47], not statistically significant. Authors note that unmeasured confounders may hav…		
Jun 17 2020	Early	*Capucci et al., J. Cardiovasc. Med. 21, 922–923, doi:10.2459/JCM.…*		Low hospitalization rate without severe arrhythmias: a prospective survey on 3…
	Details	Prospective analysis of early treatment of 350 patients in Italy (without waiting for PCR results), showing low hospitalization rates and no serious adver…		
Jun 17 2020	Late	*Xue et al., J. Med. Virology, June 17, 2020, doi:10.1002/jmv.26193 (…*		Hydroxychloroquine treatment in COVID-19: a descriptive observational analys…
	Details	30 hospitalized patients. Early use of HCQ is more effective, 43% reduction in progression from moderate to severe. "Early" is relative here, within 7 days…		
Jun 17 2020	Late	*Luo et al., Annals of Oncolog…*	death, ↑2.2%, p=0.99	COVID-19 in patients with lung cancer
	Details	Analysis of hospitalized lung cancer patients with 35 of 48 taking HCQ, mortality OR 1.03, p = 0.99.		
Jun 16 2020	Late	*Kim et al., Korean J Intern Med, doi:10.3904/kjim.2020.224 (Peer R…*		Lopinavir-ritonavir versus hydroxychloroquine for viral clearance and clinical i…
	Details	Small retrospective study of hospitalized patients with 31 lopinavir-ritonavir and 34 HCQ patients, HCQ 400mg once per day, finding no significant diffe…		
Jun 16 2020	PrEP	*WHIP COVID-19 (News)*	news	Henry Ford Health System still moving forward with hydroxychloroquine study
	Details	Ongoing WHIP COVID-19 HCQ PrEP study reports analyzing their data and seeing a significantly improved outcome in a group of COVID-19 patients wh…		
Jun 16 2020	PrEP	*Huang et al., Annals of the R…*	hosp., ↓80.0%, p<0.001	Clinical characteristics of 17 patients with COVID-19 and systemic autoimmun…
	Details	Analysis of 1255 COVID-19 patients in Wuhan Tongji Hospital finding 0.61% with systemic autoimmune diseases, much lower than authors expected (…		
Jun 12 2020	Theo…	*Scherrmann, AAPS J 22, 86 (…*	theory	Intracellular ABCB1 as a Possible Mechanism to Explain the Synergistic Effect …
	Details	Theory paper, not included in the study count or percentages. Proposes a new mechanism supporting the synergistic interaction between HCQ+AZ.		
Jun 12 2020	Late	*Giacomelli et al., Journal of Medical Virology, doi:10.1002/jmv.2640…*		Early administration of lopinavir/ritonavir plus hydroxychloroquine does not al…
	Details	Late stage study of hospitalized patients comparing treatment starting within 5 days versus later. Note that "early" here is only relative - all patients are …		
Jun 10 2020	Late	*Wang et al., medRxiv, doi:10.…*	death, ↓5.8%, p=0.63	Comorbidity and Sociodemographic determinants in COVID-19 Mortality in an …
	Details	Database analysis of 7,592 patients in NYC, showing adjusted HCQ mortality odds ratio OR 0.96, p = 0.82, and HCQ+AZ OR 0.94, p = 0.63		
Jun 10 2020	Early	*Otea et al., medRxiv, doi:10.1101/2020.06.10.20101105 (Preprint)*		A short therapeutic regimen based on hydroxychloroquine plus azithromycin f…
	Details	80 moderate cases, HCQ+AZ appears to reduce serious complications and death. Moderate treated cases resulted in hospitalization at the same rate a…		
Jun 9 2020	Early	*Pirnay et al., Hosp. Pharm. and Clinician, doi:10.1016/j.phclin.2020.…*		Beneficial effect of Hydroxychloroquine-Azithromycin combination in the treat…
	Details	68 very high risk nursing home residents, median age 86, HCQ+AZ early treatment within 2.5 days onset, 2 stopped due to QTc. Only 7 died, significantl…		
Jun 9 2020	PrEP	*Bhattacharya et al., medRxix,…*	cases, ↓80.7%, p=0.001	Pre exposure Hydroxychloroquine use is associated with reduced COVID19 risk…
	Details	HCQ reduced cases from 38% to 7%. 106 people. No serious adverse effects.		
Jun 6 2020	Revie…	*Roussel et al., New Microbes…*	review	Influence of conflicts of interest on public positions in the COVID-19 era, the ca…
	Details	Shows a correlation (Spearman test, p = 0.017) between the amount received from Gilead Sciences and public opposition to the use of HCQ in France.		
Jun 6 2020	Early,…	*Million et al., New Microbes …*	meta-analysis	Clinical Efficacy of Chloroquine derivatives in COVID-19 Infection: Comparative…
	Details	[H]CQ effective and reduces mortality by a factor 3. Meta analysis of 20 studies.		
Jun 5 2020	Late	*RECOVERY Collaborative Gro…*	death, ↑9.0%, p=0.15	Effect of Hydroxychloroquine in Hospitalized Patients with COVID-19: Prelimin…
	Details	RECOVERY trial finds no significant benefit for very late stage very sick patients. Results may be due to the unusually high dosage used (9.2g total over…		

Jun 3 2020
PEP *Boulware et al., NEJM, June …* cases, ↓17.0%, p=0.35 A Randomized Trial of Hydroxychloroquine as Postexposure Prophylaxis for C…
Details COVID-19 cases are reduced by [49%, 29%, 16%] respectively when taken within ~[70, 94, 118] hours of exposure (including shipping delay). The treatm…

Jun 1 2020
N/A *Al-Kofahi et al., Clin. Pharma…* dosing study Finding the Dose for Hydroxychloroquine Prophylaxis for COVID-19: The Despe…
Details Analysis of HCQ dosing regimens, recommending: PrEP: 800mg loading dose followed by 400mg 2 or 3 times weekly to maintain weekly troughs above…

May 31 2020
Early *Guérin et al., Asian J. Medici…* death, ↓61.4%, p=1.00 Azithromycin and Hydroxychloroquine Accelerate Recovery of Outpatients with…
Details Mean clinical recovery time reduced from 26 days (SOC) to 9 days, p<0.0001 (HCQ+AZ) or 13 days, p<0.0001 (AZ). No cardiac toxicity. Small retrospecti…

May 29 2020
Late *Rogado et al., Lung Cancer, d…* death, ↓91.6%, p=0.02 Covid-19 and lung cancer: A greater fatality rate?
Details Retrospective 17 hospitalized lung cancer patients showing lower mortality with HCQ+AZ treatment.

May 28 2020
Late *Chamieh et al., medRxiv 2020.05.28.20114835, doi:10.1101/2020.…* Viral Dynamics Matter in COVID-19 Pneumonia: the success of early treatment …
Details HCQ+AZ potentially explains 94.7% success in treating a fairly complex cohort.

May 28 2020
PrEP *Chatterjee et al., Indian J. Me…* cases, ↓66.8%, p<0.001 Healthcare workers & SARS-CoV-2 infection in India: A case-control investigati…
Details 4+ doses of HCQ associated with a significant decline in the odds of getting infected, dose-response relationship exists.

May 28 2020
Late *Huang et al., National Scienc…* viral- time, ↓67.0%, p<0.0001 Preliminary evidence from a multicenter prospective observational study of the…
Details 197 CQ patients, 176 control. Mean time to undetectable viral RNA and duration of fever significantly reduced. No serious adverse events.

May 27 2020
Late *Goldman et al., NEJM, doi:10…* death, ↓22.3%, p=0.46 Remdesivir for 5 or 10 Days in Patients with Severe Covid-19
Details Study focused on remdesivir but with results for HCQ in the supplementary appendix, showing 9% death with HCQ versus 12% control, unadjusted relati…

May 28 2020
Late *Kuderer et al., Lancet, June 2…* death, ↑134.2%, p<0.0001 Clinical impact of COVID-19 on patients with cancer (CCC19): a cohort study
Details Retrospective 928 cancer patients, showing HCQ OR 1.06 [0.51-2.20]. HCQ+AZ OR 2.93 [1.79-4.79]. The relative risks of different therapies suggest that …

May 28 2020
PrEP *Gianfrancesco et al., Annals …* hosp., ↓3.3%, p=0.82 Characteristics associated with hospitalisation for COVID-19 in people with rhe…
Details Analysis of rheumatic disease patients showing no significant association between antimalarial therapy and hospitalisation, OR=0.94 [0.57-1.57], p=0.…

May 27 2020
Early *Risch, American Journal of E…* meta-analysis Early Outpatient Treatment of Symptomatic, High-Risk Covid-19 Patients that …
Details Five studies, including two controlled clinical trials, have demonstrated significant outpatient treatment efficacy.

May 25 2020
Late *Ip et al., PLoS ONE, doi:10.13…* death, ↓1.0%, p=0.93 Hydroxychloroquine and Tocilizumab Therapy in COVID-19 Patients - An Obse…
Details Retrospective study of late stage use on 2,512 hospitalized patients showing no significant differences in associated mortality for patients receiving an…

May 24 2020
Late *Hraiech et al., Ann. Intensive …* death, ↓64.7%, p=0.21 Lack of viral clearance by the combination of hydroxychloroquine and azithro…
Details Retrospective 45 ICU patients, 17 treated with HCQ+AZ, showing no significant difference in viral clearance after 6 days, or mortality 6 days from ARDS.

May 22 2020
PEP, … *ICMR, Indian Council of Medi…* advisory Revised advisory on the use of Hydroxychloroquine (HCQ) as prophylaxis for S…
Details Healthcare workers on HCQ prophylaxis less likely to get COVID. Significant dose-response relationship. Extends recommended HCQ prophylaxis to asy…

May 22 2020
Late *Mehra et al., The Lancet, May…* retracted Hydroxychloroquine or chloroquine with or without a macrolide for treatment o…
Details Incorrect at first read (implausible death, ventilation, and population numbers). This paper was retracted.

May 19 2020
Late *Singh et al., medRxiv, doi:10.…* death, ↓5.0%, p=0.72 Outcomes of Hydroxychloroquine Treatment Among Hospitalized COVID-19 P…
Details EHR analysis of 3,372 hospitalized COVID-19 patients not showing a significant difference for mortality or the risk of mechanical ventilation. Subject to …

May 18 2020
Late *Kim et al., medRxiv, doi:10.1…* hosp. time, ↓51.0%, p=0.01 Treatment Response to Hydroxychloroquine, Lopinavir/Ritonavir, and Antibioti…
Details Retrospective of 97 moderate cases. Time to viral clearance significantly shorter for HCQ+antibiotic. Preprint withdrawn pending peer review.

May 18 2020
Early *Ahmad et al., doi:10.1101/2020.05.18.20066902 (Preprint)* Doxycycline and Hydroxychloroquine as Treatment for High-Risk COVID-19 Pat…
Details 54 patients in long term care facilities. 6% death with HCQ+AZ compared to 22% using a naive indirect comparison.

May 16 2020
PrEP *Macias et al., medRxiv, 10.11…* hosp., ↓25.5%, p=1.00 Similar incidence of Coronavirus Disease 2019 (COVID-19) in patients with rhe…
Details Very small retrospective study of rheumatic disease patients, sample size is too small for statistical significance (HCQ 0.5-4.0%, no-HCQ 0.4-2.7%). Con…

May 15 2020
Late *Yu et al., Science China Life S…* death, ↓60.5%, p=0.002 Low Dose of Hydroxychloroquine Reduces Fatality of Critically Ill Patients With…
Details Retrospective, 550 critically ill patients. 19% fatality for HCQ versus 47% for non-HCQ, RR 0.395, p=0.002. The levels of inflammatory cytokine IL-6 were …

May 14 2020
Late *Mahévas et al., BMJ 2020, 3…* death, ↑20.0%, p=0.75 Clinical efficacy of hydroxychloroquine in patients with covid-19 pneumonia w…
Details Observational study of 181 patients with advanced disease requiring oxygen showing no benefit for HCQ. Power of study appears too low to support co…

May 13 2020
Late *Okour et al., Journal of Pharmacokinetics and Pharmacodynamics, …* Hydroxychloroquine and azithromycin as potential treatments for COVID-19; cl…
Details Odds of PCR-positive decrease by 53% for each unit increase in HCQ log-concentration. Similarly, the odds decrease by 61%, and by 12% for each day i…

May 12 2020
PrEP *Cassione et al., Annals of the…* cases, ↑49.6%, p=0.59 COVID-19 infection in a northern-Italian cohort of systemic lupus erythematos…
Details Survey of 165 SLE patients, 127 on HCQ. 8 patients with suspected COVID-19 and 4 confirmed cases. No mortality, one ICU case. 7 patients had no sym…

May 11 2020
Late *Shabrawishi et al., medRxix, …* viral+, ↓14.7%, p=0.66 Negative nasopharyngeal SARS-CoV-2 PCR conversion in response to different…
Details Retrospective 93 hospitalized patients in Saudi Arabia showing a non-statistically significant 15% reduction in PCR positive results at day 5, RR 0.85, p …

May 11 2020	Late	*Rosenberg et al., JAMA, May …*	death, ↑35.0%, p=0.31	Association of Treatment With Hydroxychloroquine or Azithromycin With In-Ho…
	Details	Restrospective observational late stage study showing no significant differences but calling for clinical trials. Zervos et al. [1] point out serious limitatio…		
May 10 2020	Late	*Alberici et al., Kidney Int., 98:…*	death, ↓42.9%, p=0.12	A report from the Brescia Renal COVID Task Force on the clinical characteristic…
	Details	Analysis of 94 hemodialysis COVID-19 positive patients. Reduction in death seen with HCQ but *p*=0.12, OR 0.44 [0.16–1.24].		
May 8 2020	Ex Vi…	*Grassin-Delyle et al., Clinical I…*	*ex vivo*	Chloroquine Inhibits the Release of Inflammatory Cytokines by Human Lung E…
	Details	On human lung parenchymal explants, CQ concentration clinically achievable in the lung (100 µM) inhibited the lipopolysaccharide-induced release of …		
May 8 2020	Late	*Carlucci et al., J. Med. Microbiol., Sep 15, 2020, doi: 10.1099/jmm.0…*		Zinc sulfate in combination with a zinc ionophore may improve outcomes in h…
	Details	Retrospective 932 patients showing that the addition of zinc to HCQ+AZ reduced mortality / transfer to hospice, ICU admission, and the need for ventila…		
May 7 2020	PrEP	*Konig et al., Annals of the Rh…*	hosp., ↓3.0%, p=0.88	Baseline use of hydroxychloroquine in systemic lupus erythematosus does not…
	Details	Analysis of 80 SLE patients diagnosed with COVID-19, showing the frequency of hospitalisation did not differ between individuals using an antimalarial…		
May 7 2020	Theo…	*Derendorf, H., Int. J. Antimicr…*	theory	Excessive lysosomal ion-trapping of hydroxychloroquine and azithromycin
	Details	Discusses pharmacokinetic properties of HCQ+AZ as a potential underlying mechanism of the observed antiviral effects.		
May 7 2020	Late	*Geleris et al., NEJM, May 7, 2…*	int./death, ↑4.0%, p=0.76	Observational Study of Hydroxychloroquine in Hospitalized Patients with Covi…
	Details	There appears to be a major error in this paper. Before propensity matching, 38 control patients had hypertension. After propensity matching, 146 patie…		
May 7 2020	N/A	*Sermo (News)*	news	Sermo reports: COVID-19 treatment trends over 6 weeks and 33,700 interviews:…
	Details	HCQ used by 55% of physicians worldwide for COVID. Survey of 6,150 physicians.		
May 6 2020	Anim…	*Maisonnasse et al., Nature, 2…*	animal study	Hydroxychloroquine use against SARS-CoV-2 infection in non-human primates
	Details	Monkey study which reports no effect of HCQ or HCQ+AZ. However, there are several signs of effectiveness despite the very small sample sizes and 100…		
May 5 2020	Late	*Membrillo de Novales et al., …*	death, ↓55.1%, p=0.002	Early Hydroxychloroquine Is Associated with an Increase of Survival in COVID-…
	Details	166 patients hospitalised with COVID-19, HCQ increased survival 1.4 - 1.8 times when patients admitted in early stages. Early is relative to hospital ad…		
May 5 2020	Early,…	*Million et al., Travel Med Infect Dis., 2020 May 5, doi:10.1016/j.tmai…*		Early Treatment of COVID-19 Patients With Hydroxychloroquine and Azithromy…
	Details	Retrospective 1061 patients. HCQ+AZ safe and results in a low fatality rate.		
May 5 2020	PrEP	*Gendelman et al., Autoimmu…*	cases, ↓8.1%, p=0.88	Continuous Hydroxychloroquine or Colchicine Therapy Does Not Prevent Infect…
	Details	Very small study of rheumatic disease/autoimmune disorder patients showing no significant difference but with only 3 chronic HCQ patient cases. Only…		
May 5 2020	PrEP	*Mitchell et al., SSRN, doi:10.2…*	death, ↓99.0%, p<0.0001	Markedly Lower Rates of Coronavirus Infection and Fatality in Malaria-Endemi…
	Details	Analysis of COVID-19 amongst 2.4B people shows a wide counterintuitive disparity between well-developed and less-developed countries, with more a…		
May 4 2020	PrEP	*Huh et al., medRxiv, doi:10.1…*	cases, ↑47.7%, p=0.09	Association of previous medications with the risk of COVID-19: a nationwide cl…
	Details	Database analysis of many drugs and COVID-19 cases, with 23 cases taking HCQ, and 251 control patients not taking HCQ, showing OR 1.07, *p*=0.77, a…		
May 2 2020	Late	*Mallat et al., Medicine (Balti…*	viral- time, ↑203.0%, p=0.02	Hydroxychloroquine is associated with slower viral clearance in clinical COVID…
	Details	Very small retrospective analysis of 34 patients finding slower binary PCR viral clearance with HCQ. No information on severity for treatment versus co…		
May 1 2020	N/A	*Mercuro et al., JAMA Cardiol.…*	safety analysis	Risk of QT Interval Prolongation Associated With Use of Hydroxychloroquine …
	Details	Study of 90 hospitalized patients given HCQ, 53 also receiving AZ, 53% hypertension, 29% diabetes mellitus, baseline median QTc 473ms for HCQ, and …		
May 1 2020	N/A	*Bessière et al., JAMA Cardiol.…*	safety analysis	Assessment of QT Intervals in a Case Series of Patients With Coronavirus Dise…
	Details	Study of 40 very serious condition ICU patients, 75% required invasive mechanical ventilation, 63% received vasoactive drugs, 50% received other treat…		
May 2 2020	Late	*Seydi (News)*	news	Coronavirus: a study in Senegal confirms the effectiveness of hydroxychloroqu…
	Details	Preliminary results of Senegal trial with 181 patients showing faster recovery with HCQ, and even faster recovery with HCQ+AZ.		
Apr 30 2020	Early	*Meo et al., Eur. Rev. Med. Pharmacol. Sci. 2020, 24 (8), 4539-4547, …*		Efficacy of chloroquine and hydroxychloroquine in the treatment of COVID-19
	Details	Analysis of COVID-19 and malaria, finding that COVID-19 is highly pandemic in countries where malaria is least pandemic, and vice versa, suggesting t…		
Apr 27 2020	Late	*Sánchez-Álvarez et al., Nefrol…*	death, ↓45.9%, p=0.005	Status of SARS-CoV-2 infection in patients on renal replacement therapy. Repo…
	Details	Analysis of 868 patients on renal replacement therapy. Statistically significant reduction in mortality with HCQ for patients on dialysis (OR 0.47, *p*=0.00…		
Apr 29 2020	N/A	*Saleh et al., Circulation: Arrhy…*	safety analysis	The Effect of Chloroquine, Hydroxychloroquine and Azithromycin on the Correc…
	Details	201 hospitalized patients. No serious side effects of HCQ. No instances of Torsade de pointes, or arrhythmogenic death were reported. They report that …		
Apr 27 2020	N/A	*Klimke et al., Med. Hypothes…*	dosing study	Hydroxychloroquine as an aerosol might markedly reduce and even prevent se…
	Details	Proposal to use HCQ as an aerosol in order to reach sufficient therapeutic levels at the alveolar epithelial cells. Authors suggest this will reduce adverse …		
Apr 26 2020	Late	*Auld et al., Critical Care Medi…*	death, ↑2.8%, p=1.00	ICU and ventilator mortality among critically ill adults with COVID-19
	Details	Retrospective 217 critically ill patients, 114 receiving HCQ, showing no significant difference in mortality.		
Apr 25 2020	In Vit…	*Andreani et al., Microbial Pat…*	*in vitro*	In vitro testing of combined hydroxychloroquine and azithromycin on SARS-Co…
	Details	HCQ and AZ has a synergistic effect *in vitro* on SARS-CoV-2 at concentrations compatible with that obtained in human lung.		

Apr 24 2020	Early	***Ashraf*** *et al., medRxiv doi:10.…*	death, ↓**67.5%**, p=0.15	COVID-19 in Iran, a comprehensive investigation from exposure to treatment o…
	Details	Small limited trial with 100 patients concluding that HCQ improved clinical outcome, OR 0.016 [0.002-0.11] in regression analysis.		
Apr 21 2020	Late	***Izoulet*** *M., SSRN, doi:10.213…*	death, ↓**85.0%**, p<0.001	Countries which Primarily Use Antimalarial Drugs As COVID-19 Treatment See …
	Details	Compares the dynamics of daily deaths in the 10 days following the 3rd death in countries using and not using [H]CQ, showing dramatically lower deat…		
Apr 21 2020	Late	***Magagnoli*** *et al., Med (2020)…*	death, ↓**11.0%**, p=0.74	Outcomes of hydroxychloroquine usage in United States veterans hospitalized…
	Details	Retrospective 807 hospitalized patients, no statistically significant reduction in mortality or the need for mechanical ventilation with HCQ or HCQ+AZ, o…		
Apr 17 2020	PEP	***Lee*** *at al., Int. J. Antimicrob. Agents, 2020, Apr 17, doi:10.1016/j.ijan…*		Can Post-Exposure Prophylaxis for COVID-19 Be Considered as an Outbreak R…
	Details	Post exposure prophylaxis of 211 high-risk people after major exposure event in a long term care hospital, showing no positive cases after 14 days.		
Apr 16 2020	Late	***Borba*** *et al., JAMA Network Open, doi:10.1001/jamanetworkopen.2…*		Chloroquine diphosphate in two different dosages as adjunctive therapy of ho…
	Details	Comparison of typical CQ dosage with high dosage CQ (600mg CQ twice daily for 10 days), showing higher mortality with high dosage, OR 2.8 [0.9 - 8.…		
Apr 15 2020	Early,…	***Esper*** *et al., Prevent Senior In…*	hosp., ↓**64.0%**, p=0.02	Empirical treatment with hydroxychloroquine and azithromycin for suspected …
	Details	636 patients. HCQ+AZ reduced hospitalization 79% when used within 7 days (65% overall). Non-randomized.		
Apr 15 2020	Theo…	***Brufsky****, A., J. Medical Virolo…*	theory	Hyperglycemia, hydroxychloroquine, and the COVID-19 pandemic
	Details	Theory on the effectiveness of HCQ. HCQ has been shown to block the polarization of macrophages to an M1 inflammatory subtype and is predicted to…		
Apr 14 2020	Late	***Tang*** *et al., BMJ 2020, 369, d…*	viral+, ↓**21.4%**, p=0.51	Hydroxychloroquine in patients with COVID-19: an open-label, randomized, con…
	Details	150 patients very late stage RCT showing no significant difference. Treatment very late, average 16.6 days after symptom onset. Data favorable to HCQ…		
Apr 13 2020	Revie…	***Gao*** *et al., Biosci Trends, May…*	review	Update on Use of Chloroquine/Hydroxychloroquine to Treat Coronavirus Disea…
	Details	Increasing evidence from completed clinical studies shows CQ and HCQ effective (HCQ more effective).		
Apr 12 2020	Late	***Barbosa*** *et al., Preprint (Prep…*	death, ↑**147.0%**, p=0.58	Clinical outcomes of hydroxychloroquine in hospitalized patients with COVID-1…
	Details	Small retrospective study with 63 patients (32 treated with HCQ), showing no effectiveness, however the baseline state of each arm significantly differs.…		
Apr 11 2020	Early	***Gautret*** *et al., Travel Medicine and Infectious Disease, doi:10.1016/j.…*		Clinical and microbiological effect of a combination of hydroxychloroquine an…
	Details	Pilot study suggesting improvement with HCQ+AZ and recommending further study. 80 patients with relatively mild cases, no control group, and no att…		
Apr 10 2020	Late	***Lover****, medRxiv, doi:10.1101/…*	meta-analysis	Quantifying treatment effects of hydroxychloroquine and azithromycin for COV…
	Details	Secondary analysis of Gautret et al. showing "modest to no impact of HCQ treatment, with more significant effects from [HCQ+AZ]".		
Apr 3 2020	Theo…	***Fantini*** *et al., Int J Antimicro…*	theory	Structural and molecular modelling studies reveal a new mechanism of action …
	Details	In-silico analysis confirming the antiviral properties of CQ, showing a new mechanism of action of CQ, and showing that HCQ is more potent than CQ.		
Apr 1 2020	Early	***Huang*** *et al., Journal of Mole…*	no recov., ↓**91.7%**, p=0.02	Treating COVID-19 with Chloroquine
	Details	22 patients. All CQ patients discharged by day 14 versus 50% of Lopinavir/Rotinavir patients. Symptom onset to treatment 2.5 days for CQ vs. 6.5 days …		
Mar 31 2020	Late	***Chen*** *et al., medRxiv doi:10.1…*	pneumonia, ↓**57.0%**, p=0.04	Efficacy of hydroxychloroquine in patients with COVID-19: results of a randomi…
	Details	62 patients. RCT showing significantly faster recovery with HCQ. 13% progressed to severe cases in the control group, versus 0% for the treatment grou…		
Mar 31 2020	In Vit…	***Clementi*** *et al., Front. Microb…*	*in vitro*	Combined Prophylactic and Therapeutic Use Maximizes Hydroxychloroquine …
	Details	*In Vitro* study showing greater inhibition for combined pre and post-exposure treatment for Vero E6 and Caco-2 cells.		
Mar 28 2020	Late	***Molina*** *et al., Médecine et Maladies Infectieuses, 50:4, June 2020, 1…*		No evidence of rapid antiviral clearance or clinical benefit with the combinatio…
	Details	Report on 11 patients treated with HCQ with no control group. Authors suggest there is no evidence of benefit for HCQ based on PCR+ results for 8/10 p…		
Mar 26 2020	Late	***Zhong*** *Nanshan (钟南山) (Pr…*	viral+, ↓**80.0%**, p<0.0001	Efficacy and safety of chloroquine for treatment of COVID-19. An open-label, m…
	Details	197 patients. CQ effective. Day 10 viral RNA negative 91.4% HCQ versus 57.4% control. Median time to negative test 3 days versus 9 days for control.		
Mar 24 2020	Theo…	***Pagliano*** *et al., Clin. Infect. Di…*	theory	Is Hydroxychloroquine a Possible Post-Exposure Prophylaxis Drug to Limit the …
	Details	CQ and HCQ inhibit replication at early stages of infection, no similar effect reported for other drugs which are only able to interfere after cell infection. L…		
Mar 23 2020	Theo…	***Hu*** *et al., Nature Nanotechnol…*	theory	Insights from nanomedicine into chloroquine efficacy against COVID-19
	Details	CQ is known in nanomedicine research for the investigation of nanoparticle uptake in cells, and may have potential for the treatment of COVID-19.		
Mar 21 2020	PrEP	***ICMR****, Indian Council of Medi…*	advisory	Advisory on the use of hydroxy-chloroquine as prophylaxis for SARS-CoV-2 inf…
	Details	Recommends HCQ for prophylaxis in asymptomatic healthcare workers as found effective in-vitro and in-vivo.		
Mar 20 2020	Late	***Hu*** *et al., Shanghai Combine…*	news	Shanghai Experience of COVID-19 Management
	Details	Clinical studies of HCQ with 184 cases and 21 hospitals show HCQ is effective.		
Mar 18 2020	In Vit…	***Liu*** *et al., Cell Discovery 6, 16…*	*in vitro*	Hydroxychloroquine, a less toxic derivative of chloroquine, is effective in inhibit…
	Details	*In Vitro* study showing that HCQ is effective *in vitro* and less toxic than CQ. In addition to direct antiviral activity, HCQ is a safe and successful anti-infla…		
Mar 17 2020	Early	***Gautret*** *et al., Int. J. of Antimi…*	viral+, ↓**66.0%**, p=0.001	Hydroxychloroquine and azithromycin as a treatment of COVID-19: results of a…
	Details	HCQ was significantly associated with reduction / elimination of viral load, which was enhanced with AZ. Updated 8/13: responses to this paper have r…		

Mar 17 2020	Revie…	*Sahraei et al., Int. J. Antimicr…*	review	Aminoquinolines against coronavirus disease 2019 (COVID-19): chloroquine or…
	Details	Discussion of mechanisms of action, CQ vs. HCQ, early studies, safety.		
Mar 13 2020	Revie…	*Todaro and Rigano (Review) …*	review	An Effective Treatment for Coronavirus (COVID-19)
	Details	Discussion of existing research, treatment guidelines, and mechanisms of action for CQ and HCQ, recommending use.		
Mar 12 2020	Theo…	*Devaux et al., International J…*	theory	New insights on the antiviral effects of chloroquine against coronavirus: what t…
	Details	Discusses mechanisms of CQ interference with the SARS-CoV-2 replication cycle.		
Mar 10 2020	N/A	*Cortegiani et al., J. Crit. Care, …*	meta-analysis	A Systematic Review on the Efficacy and Safety of Chloroquine for the Treatme…
	Details	Review of six articles and 23 ongoing clinical trials in China recommending research and clinical use adhering to MEURI.		
Mar 9 2020	In Vit…	*Yao et al., Clin. Infect. Dis., 20…*	*in vitro*	In Vitro Antiviral Activity and Projection of Optimized Dosing Design of Hydrox…
	Details	*In Vitro* study showing that HCQ is more potent than CQ *in vitro* for inhibiting SARS-CoV-2. Simulates HCQ concentration in lung fluid and provides dosi…		
Mar 6 2020	Late	*Chen et al., J. Zhejiang Unive…*	progression, ↓29.0%, p=0.57	A pilot study of hydroxychloroquine in treatment of patients with common cor…
	Details	30 moderate hospitalized cases, all recovered. Time to RNA negative comparable. Less frequent radiological progression with HCQ but not statistically …		
Mar 4 2020	Revie…	*Colson et al., Int J. Antimicro…*	review	Chloroquine and Hydroxychloroquine as Available Weapons to Fight COVID-19
	Details	Recommending CQ and HCQ for COVID-19 based on 20 clinical studies in China and a strong rationale for use.		
Feb 20 2020	Late	*Jiang et al., Chin. J. Tuberc. Respir. Dis., 2020, 43, doi:10.3760/cma.…*		Expert Consensus on Chloroquine Phosphate for the Treatment of Novel Coron…
	Details	Early trials in China show CQ results in shorter hospital stays and improved patient outcomes.		
Feb 19 2020	Late	*Gao et al., BioScience Trends, 2020, doi:10.5582/bst.2020.01047 (P…*		Breakthrough: Chloroquine phosphate has shown apparent efficacy in treatme…
	Details	Results from 15 clinical trials in China showing CQ is effective.		
Feb 17 2020	Late	*Sun, Y., deputy head of the C…*	news	Antimalarial drug confirmed effective on COVID-19
	Details	HCQ under clinical trials in >10 hospitals in China and has shown fairly good efficacy.		
Feb 11 2020	Late	*Xia et al., ChiCTR200002974…*	viral+, ↓37.5%, p=0.17	Efficacy of Chloroquine and Lopinavir/ Ritonavir in mild/general novel coronavi…
	Details	Early results from a very small trial, reported within the application for a later trial. Very minimal details are provided, but we include this as the earliest …		
Feb 4 2020	In Vit…	*Wang et al., Cell Res. 30, 269…*	*in vitro*	Remdesivir and chloroquine effectively inhibit the recently emerged novel coro…
	Details	*In Vitro* study showing that Remdesivir and CQ potently blocked SARS-CoV-2 infection.		
2017	N/A	*Chhonker et al., Journal of C…*	dosing study	Simultaneous quantitation of hydroxychloroquine and its metabolites in mous…
	Details	Presents a method for quantification of HCQ in mouse blood and tissues. They show a lung concentration significantly higher than other organs, and a…		
2014	Anim…	*Browning, D., Pharmacology …*	animal study	Pharmacology of Chloroquine and Hydroxychloroquine
	Details	Review of the pharmacology of CQ and HCQ. Some notable points: - HCQ and CQ are equipotent but CQ is more toxic, the therapeutic ratio is higher for …		
2014	In Vit…	*de Wilde et al., Antimicrobial …*	*in vitro*	Screening of an FDA-Approved Compound Library Identifies Four Small-Molec…
	Details	CQ inhibits SARS-CoV, MERS-CoV, and HCoV-229E-GFP replication in the low-micromolar range.		
2012	Anim…	*Yan et al., Cell Research, 23, …*	animal study	Anti-malaria drug chloroquine is highly effective in treating avian influenza A H…
	Details	CQ, a known autophagy inhibitor that is in clinical use, can efficiently ameliorate acute lung injury and dramatically improve the survival rate in mice inf…		
2009	Anim…	*Keyaerts et al., Antimicrob. A…*	animal study	Antiviral Activity of Chloroquine against Human Coronavirus OC43 Infection in …
	Details	CQ inhibits HCoV-OC43 replication in HRT-18 cells. A lethal HCoV-OC43 infection in newborn C57BL/6 mice can be treated with CQ acquired transplace…		
2008	In Vit…	*Kono et al., Antiviral Researc…*	*in vitro*	Inhibition of human coronavirus 229E infection in human epithelial lung cells (…
	Details	CQ significantly decreased viral replication of HCoV-229E at concentrations lower than in clinical usage. CQ affects the activation of p38 mitogen-activ…		
2006	In Vit…	*Savarino et al., Lancet Infect. …*	*in vitro*	New insights into the antiviral effects of chloroquine
	Details	Update to 2003 paper, not included in the study count or percentages. Hypothesis of CQ inhibiting SARS replication has been confirmed in two in-vitro s…		
2005	In Vit…	*Vincent et al., Virol. J. 2:69, 2…*	*in vitro*	Chloroquine is a potent inhibitor of SARS coronavirus infection and spread
	Details	*In Vitro* study, SARS-CoV-1, not included in the study count or percentages. CQ has strong antiviral effects on SARS CoV infection when cells treated eith…		
2004	In Vit…	*Keyaerts et al., Biochem. Bio…*	*in vitro*	In vitro inhibition of severe acute respiratory syndrome coronavirus by chloroq…
	Details	*In Vitro* study, SARS-CoV-1, not included in the study count or percentages. IC_{50} of CQ for antiviral activity (8.8) is significantly lower than cytostatic acti…		
2003	Theo…	*Savarino et al., Lancet Infect. …*	theory	Effects of chloroquine on viral infections: an old drug against today's diseases
	Details	Not included in the study count or percentages. Discussion/review noting that CQ exerts antiviral effects, inhibiting the replication of several viruses incl…		
1918	N/A	*Burrows, E., Medical Record, 97:6, 235, Feb 7, 1920 (Peer Reviewed)*		A confirmatory report upon the abortive action of quinine dihydrochloride
	Details	Quinine was found to be effective for the Spanish Flu in 1918.		
1901	N/A	*Yeo, B., 1901 (Peer Reviewed)*		A manual of medical treatment or clinical therapeutics
	Details	Quinine is refered to as "the remedy that is most deserving of confidence in the treatment of influenza".		

1894	Anim…	***Mossé**, Lancet, Nov 3, 1894 (…*	animal study	Pathogenesis and Treatment of Influenza
	Details	Lancet study showing quinine protected rabbits from influenza and recommending use for prophylaxis and treatment.		
1890	N/A	***Le Grelot** (News)*	news	Quinine use for the Russian influenze pandemic if 1889-1890
	Details	Quinine and antipyrine, a bitherapy for defying death during the Russian influenza pandemic of 1889-1890 (around 40,000 deaths in France at the begi…		
1889	N/A	***Edwin Wiley Grove** (News)*	news	Laxative Bromo Quinine
	Details	Quinine has been used for respiratory infections since 1889. Not included in the study count or percentages, just as an interesting observation.		

For search methods, inclusion criteria, effect extraction criteria (more serious outcomes have priority), PRISMA answers, and statistical methods see hcqmeta.com. Meta, Theory, Safety, Review, News, and Retracted items are not included in the study count. There is a total of 426 items. Studies with preprints and journal versions are listed under the earlier preprint date.

Please send us corrections, updates, or comments. *Vaccines and treatments are both extremely valuable and complementary. All practical, effective, and safe means should be used. Elimination of COVID-19 is a race against viral evolution. No treatment, vaccine, or intervention is 100% available and effective for all current and future variants. Denying the efficacy of any method increases the risk of COVID-19 becoming endemic; and increases mortality, morbidity, and collateral damage. We do not provide medical advice. Before taking any medication, consult a qualified physician who can provide personalized advice and details of risks and benefits based on your medical history and situation. Treatment protocols for physicians are available from the FLCCC.*

Feedback

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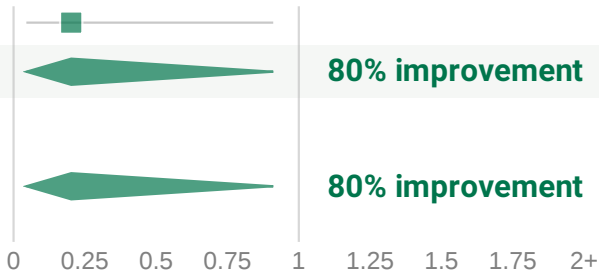
1 iota-carrageenan COVID-19 study

c19ic.com 8/17/21

	Improvement, RR [CI]		Treatment	Control
Figueroa (DB RCT)	80%	0.20 [0.04-0.91] symp. case	2/196	10/198
PrEP	80%	0.20 [0.04-0.91]	2/196	10/198
Tau^2 = 0.00; I^2 = 0.0%				
All studies	80%	0.20 [0.04-0.91]	2/196	10/198



Tau^2 = 0.00; I^2 = 0.0%; Z = 2.08

Effect extraction pre-specified

Lower Risk Increased Risk

Database of all iota-carrageenan COVID-19 studies. Submit updates/corrections.

Jun 14	Early	*Hemilä et al., Pharmacology Research and Perspectives, doi:10.100…*		Carrageenan nasal spray may double the rate of recovery from coronavirus an…
	Details	Individual patient data meta analysis of two RCTs showing nasal iota-carrageenan improved recovery rate and shortened the duration of long colds. Th…		
Apr 28	Early	*Schütz et al., American Journal of Physiology: Lung Cellular and Mo…*		Carrageenan-containing over-the-counter nasal and oral sprays inhibit SARS-C…
	Details	*In Vitro* study showing that carrageenan-containing nose spray and mouth spray inhibit SARS-CoV-2 in human airway epithelial cultures.		
Apr 27	In Vit…	*Varese et al., bioRxiv, doi:10.…*	*in vitro*	Iota-carrageenan prevents the replication of SARS-CoV-2 on an in vitro respirat…
	Details	*In Vitro* Calu-3 (human respiratory epithelial cell line) study showing that iota-carrageenan inhibits SARS-CoV-2.		
Apr 15	PrEP	*Figueroa et al., medRxiv, doi:…*	symp. case, ↓79.8%, p=0.04	Efficacy of a nasal spray containing Iota-Carrageenan in the prophylaxis of CO…
	Details	Prophylaxis RCT with 394 healthcare workers, 196 treated with iota-carrageenan, showing significantly lower symptomatic cases with treatment. There…		
Feb 17	In Vit…	*Morokutti-Kurz et al., PLoS O…*	*in vitro*	Iota-carrageenan neutralizes SARS-CoV-2 and inhibits viral replication in vitro
	Details	*In Vitro* study showing that SARS-CoV-2 is inhibited by iota-carrageenan in a dose dependent manner and to the same extent as other respiratory viruse…		
Aug 21 2020	In Vit…	*Bansal et al., bioRxiv, doi:10.…*	*in vitro*	Iota-carrageenan and Xylitol inhibit SARS-CoV-2 in cell culture
	Details	*In Vitro* study showing that iota-carrageenan in concentrations as low as 6 µg/mL (easily achievable with existing nasal sprays) inhibits SARS-CoV-2 in…		
2014	Early	*Koenighofer et al., Multidisciplinary Respiratory Medicine, doi:10.11…*		Carrageenan nasal spray in virus confirmed common cold: individual patient d…
	Details	Analysis of 2 RCTs concluding that carrageenan nasal spray reduced duration of virus-confirmed common colds, increased viral clearance, and reduce…		

Please send us corrections, updates, or comments. *Vaccines and treatments are both extremely valuable and complementary. All practical, effective, and safe means should be used. Elimination of COVID-19 is a race against viral evolution. No treatment, vaccine, or intervention is 100% available and effective for all current and future variants. Denying the efficacy of any method increases the risk of COVID-19 becoming endemic; and increases mortality, morbidity, and collateral damage. We do not provide medical advice. Before taking any medication, consult a qualified physician who can provide personalized advice and details of risks and benefits based on your medical history and situation. Treatment protocols for physicians are available from the FLCCC.*

Feedback

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IVERMECTIN FOR COVID-19

63 TRIALS, 613 SCIENTISTS, 26,398 PATIENTS

31 RANDOMIZED CONTROLLED TRIALS

86% IMPROVEMENT IN 14 PROPHYLAXIS TRIALS RR 0.14 [0.08-0.25]

73% IMPROVEMENT IN 27 EARLY TREATMENT TRIALS RR 0.27 [0.16-0.44]

40% IMPROVEMENT IN 22 LATE TREATMENT TRIALS RR 0.60 [0.48-0.76]

61% IMPROVEMENT IN 25 MORTALITY RESULTS RR 0.39 [0.28-0.56]

60% IMPROVEMENT IN 31 RANDOMIZED CONTROLLED TRIALS RR 0.40 [0.28-0.57]

SUMMARY OF RESULTS REPORTED IN IVERMECTIN TRIALS FOR COVID-19. 08/17/21. IVMMETA.COM

Database of all ivermectin COVID-19 studies. 110 studies, 68 peer reviewed, 63 with results comparing treatment and control groups. FLCCC provides treatment recommendations. Ivermectin related news can be found on Telegram channels BiRD and FLCCC. Submit updates/corrections.

Search: Restrict: **All** Early Late Prophylaxis

Aug 12	Early,...	*Covid Analysis* (Preprint) (me...	meta-analysis v110	Ivermectin for COVID-19: real-time meta analysis of 63 studies
	Details	• Meta analysis using the most serious outcome reported shows 73% [56-84%] and 86% [75-92%] improvement for early treatment and prophylaxis, wit...		
Aug 12	Late	*Elavarasi et al., medRxiv, doi:...*	death, ↓19.6%, p=0.12	Clinical features, demography and predictors of outcomes of SARS-CoV-2 infec...
	Details	Retrospective 2017 hospitalized patients in India, showing lower mortality with ivermectin treatment in unadjusted results. No group details are provide...		
Aug 10	News	*La Pampa, Argentina (News)*	death, ↓27.4%	La Pampa expondrá a la comunidad científica los resultados del Programa de ...
	Details	News report on the use of ivermectin in La Pampa, Argentina, showing lower mortality with treatment.		
Aug 6	Revie...	*Kow et al., American Journal ...*	review	Pitfalls in Reporting Sample Size Calculation Across Randomized Controlled Tr...
	Details	Review of sample size calculations in ivermectin RCTs, showing that existing RCTs are very underpowered.		
Aug 6	Early	*Together Trial (News)*	death, ↓18.0%, p=0.54	Early Treatment of COVID-19 with Repurposed Therapies: The TOGETHER Ada...
	Details	Preliminary report from the Together Trial showing mortality RR 0.82 [0.44-1.52]. Treatment delay is currently unknown, however the protocol allows ver...		
Aug 5	In Sili...	*Rana et al., Research Square, doi:10.21203/rs.3.rs-755838/v1 (Prep...*		A Computational Study of Ivermectin and Doxycycline Combination Drug Agai...
	Details	*In silico* study showing strong binding affinity of ivermectin and doxycycline for SARS-CoV-2 main protease 3CLpro, and increased binding affinity for th...		
Aug 3	Revie...	*Santin et al., New Microbes a...*	review	Ivermectin: a multifaceted drug of Nobel prize-honored distinction with indicat...
	Details	Review concluding that the evidence supports worldwide use of ivermectin for COVID-19, complementary to immunization. Authors note that it is likely ...		
Jul 28	Meta	*Popp et al., Cochrane Databa...*	meta-analysis	Ivermectin for preventing and treating COVID-19
	Details	Outdated very biased retrospective meta analysis cherry-picking a small subset of studies, with a majority of results based on only 1 or 2 studies, showi...		
Jul 25	Early	*Ontai et al., medRxiv, doi:10.1101/2021.07.21.21260223 (Preprint)*		Early multidrug treatment of SARS-CoV-2 (COVID-19) and decreased case fatal...
	Details	Report on the nationwide implementation of multi-drug COVID-19 inpatient and outpatient treatment protocols in Honduras, showing a case fatality rat...		
Jul 24	News	*World Ivermectin Day (News)*	news	World Ivermectin Day
	Details	Joint event by 22 worldwide organizations.		
Jul 23	Safety	*Mansour et al., International J...*	safety analysis	Safety of inhaled ivermectin as a repurposed direct drug for treatment of COVI...
	Details	Safety analysis of an inhaled lyophilized ivermectin formulation, showing 127-fold increase in drug solubility, and identifying safe dosage levels in rats.		
Jul 16	News	*FLCCC Alliance and British Iv...*	news	Joint Statement of the FLCCC Alliance and British Ivermectin Recommendation...
	Details	News release noting that ivermectin remains effective after excluding Elgazzar et al. Given the large magnitude effects and 61 studies, excluding one st...		
Jul 12	Meta	*Neil et al., ResearchGate, doi:...*	meta-analysis	Bayesian Meta Analysis of Ivermectin Effectiveness in Treating Covid-19 Disea...
	Details	Bayesian analysis of a subset of ivermectin trial data concluding that there is overwhelming evidence to support a causal link between ivermectin, COVI...		
Jul 8	In Sili...	*Muthusamy et al., Journal of Virology & Antiviral Research (Peer Re...*		Virtual Screening Reveals Potential Anti-Parasitic Drugs Inhibiting the Receptor...
	Details	*In Silico* study identifying 32 anti-parisitic compounds effectively inhibiting the RBD of the SARS-CoV-2 spike protein, with ivermectin being one of the to...		
Jul 8	News	*Together Trial (News)*	news	Together Trial removes mortality and adverse event outcomes, and sublingual ...
	Details	Together Trial removes mortality and adverse event outcomes, and sublingual administration mid-trial.		
Jul 7	Late	*Hazan et al., medRxiv, doi:10...*	death, ↓85.9%, p=0.04	Effectiveness of Ivermectin-Based Multidrug Therapy in Severe Hypoxic Ambul...
	Details	Small study of 24 consecutive patients in serious condition (9 days post symptoms, mean SpO_2 87.4) using combined treatment with ivermectin, doxyc...		

Jul 3	News	*Open Letter*, Statement of Co…	news	Open Letter, Statement of Concern and Request for Retraction
	Details	Open letter signed by 40 physicians detailing errors and flaws in the Roman et al. meta analysis, and requesting retraction.		
Jul 2	Revie…	*Adegboro et al., African Jour…*	review	A review of the anti-viral effects of ivermectin
	Details	Review of the antiviral effects of ivermectin.		
Jul 2	Early	*Vallejos et al., BMC Infectiou…*	death, ↑33.5%, p=0.70	Ivermectin to prevent hospitalizations in patients with COVID-19 (IVERCOR-CO…
	Details	RCT with 501 relatively low-risk outpatients in Argentina showing hospitalization OR 0.65 [0.32-1.31]. With only 7% hospitalization, the trial is underpo…		
Jun 30	Revie…	*Turkia, M., ResearchGate, doi:…*	review	A Continuation of a Timeline of Ivermectin-Related Events in the COVID-19 Pan…
	Details	An extension of the ivermectin timeline covering April - June 2021, including WHO's role and funding, Gavi, COVAX, Trusted News Initiative, International…		
Jun 28	N/A	*Roman et al., Clinical Infectio…*	meta-analysis	Ivermectin for the treatment of COVID-19: A systematic review and meta-analy…
	Details	Severely flawed meta analysis. An open letter signed by 40 physicians detailing errors and flaws, and requesting retraction, can be found at [1]. See also…		
Jun 25	Revie…	*Jagiasi et al., The Internation…*	review	Variation in therapeutic strategies for the management of severe COVID-19 in I…
	Details	Survey of medication use for severe COVID-19 in India, showing 33% adoption of ivermectin as of January 2021.		
Jun 22	News	*Misiones Ministry of Public …*	news	Results from ivermectin use from the Misiones Ministry of Public Health
	Details	News report on ivermectin use in Misiones, Argentina, showing significantly lower hospitalization and mortality, and a dose-dependent effect with impr…		
Jun 18	Revie…	*Lind et al., Journal of General…*	review	Increase in Outpatient Ivermectin Dispensing in the US During the COVID-19 Pa…
	Details	CDC analysis of ivermectin prescriptions in the US suggesting that, while national health authority recognition is delayed in that country, many physicia…		
Jun 18	Early	*Krolewiecki et al., EClinicalM…*	ventilation, ↑151.9%, p=1.00	Antiviral effect of high-dose ivermectin in adults with COVID-19: A proof-of-con…
	Details	Proof of concept RCT with 30 ivermectin patients and 15 control patients, showing a concentration dependent antiviral activity, but no significant differ…		
Jun 17	Meta	*Bryant et al., American Journ…*	death, ↓62.0%, p=0.005	Ivermectin for Prevention and Treatment of COVID-19 Infection: A Systematic R…
	Details	Systematic review, meta analysis, and trial sequential analysis of 24 RCTs finding mortality RR 0.38 [0.19-0.73].		
Jun 15	Revie…	*Zaidi et al., The Journal of An…*	review	The mechanisms of action of Ivermectin against SARS-CoV-2: An evidence-ba…
	Details	Extensive review of 20 mechanisms of action of ivermectin for SARS-CoV-2.		
Jun 15	Early	*Aref et al., International Jour…*	recov. time, ↓63.2%, p=0.0001	Clinical, Biochemical and Molecular Evaluations of Ivermectin Mucoadhesive …
	Details	RCT 114 patients in Egypt, 57 treated with ivermectin mucoadhesive nanosuspension intranasal spray, showing faster recovery and viral clearance wit…		
Jun 6	N/A	*Hariyanto et al., Reviews In …*	death, ↓69.0%, p=0.001	Ivermectin and outcomes from Covid-19 pneumonia: A systematic review and …
	Details	Systematic review and meta analysis of 19 RCTs showing mortality RR 0.31 [0.15-0.62].		
Jun 3	Revie…	*Wang et al., medRxiv, doi:10.…*	review	Minimum manufacturing costs, national prices and estimated global availabili…
	Details	Analysis of the manufacturing cost of several COVID-19 medications, showing a cost of $0.55 per course of ivermectin, including excipients, formulatio…		
Jun 2	Late	*Abd-Elsalam et al., Journal o…*	death, ↓25.0%, p=0.70	Clinical Study Evaluating the Efficacy of Ivermectin in COVID-19 Treatment: A R…
	Details	RCT 164 hospitalized patients in Egypt showing lower mortality and shorter hospitalization, but without statistical significance. There were no serious …		
May 31	PrEP…	*Mondal et al., Journal of the I…*	symp. case, ↓87.9%, p=0.006	Prevalence of COVID-19 Infection and Identification of Risk Factors among Asy…
	Details	Retrospective 1,470 healthcare workers in India, showing significantly lower risk of symptomatic COVID-19 with ivermectin prophylaxis.		
May 18	In Vit…	*Mountain Valley MD (Preprin…*	*in vitro*	Mountain Valley MD Receives Successful Results From BSL-4 COVID-19 Cleara…
	Details	*In Vitro* and mouse study with human ACE2 cells, using solubilized ivermectin with Ivectosol™, showing antiviral effect with B.1.1.7, B.1.351, and P.1 var…		
May 12	News	*FLCCC Public Statement (Ne…*	news	FLCCC Alliance Statement on the Irregular Actions of Public Health Agencies a…
	Details	Analysis of the ivermectin recommendations from WHO and others, and a call to action for all citizens, scientists, and media to counter false informatio…		
May 10	Early	*Faisal et al., The Professiona…*	no recov., ↓68.4%, p=0.005	Potential use of azithromycin alone and in combination with ivermectin in figh…
	Details	RCT 100 outpatients in Pakistan, 50 treated with ivermectin, showing faster recovery with ivermectin. All patients received AZ, zinc, vitamin C, vitamin D,…		
May 5	In Vit…	*Zatloukal et al. (News) (In Vit…*	news	News report on In Vitro results from the research institute of Prof. Zatloukal
	Details	News report on *In Vitro* results from the research institute of Prof. Zatloukal, showing that "ivermectin was able to reduce virus replication by a factor of …		
May 5	In Sili…	*Qureshi et al., Journal of Biomolecular Structure and Dynamics, doi:…*		Mechanistic insights into the inhibitory activity of FDA approved ivermectin ag…
	Details	*In Silico* study showing inhibition of importin-α1 by ivermectin, which disrupts SARS-CoV-2 replication.		
May 4	Meta	*Karale et al., medRxiv, doi:10.…*	meta-analysis	A Meta-analysis of Mortality, Need for ICU admission, Use of Mechanical Venti…
	Details	Systematic review and meta analysis with 30 studies included in quantitative analysis, showing mortality OR 0.39 [0.22-0.70]. Subgroup analysis of tria…		
May 3	Early	*Merino et al., SocArXiv Paper…*	hosp., ↓74.4%, p<0.001	Ivermectin and the odds of hospitalization due to COVID-19: evidence from a q…
	Details	Analysis of Mexico City's use of an ivermectin-based medical kit, showing significantly lower hospitalization with use. Authors use logistic-regression …		
Apr 30	Revie…	*Kory et al., American Journal …*	review	Review of the Emerging Evidence Demonstrating the Efficacy of Ivermectin in t…
	Details	Review of ivermectin trials and epidemiological data, concluding that ivermectin is effective for prophylaxis and treatment, and should be globally and …		

Apr 29	Late	*Ahsan et al., Cureus, doi:10.7…*	death, ↓50.0%, p=0.03	Clinical Variants, Characteristics, and Outcomes Among COVID-19 Patients: A …
	Details	Retrospective 165 hospitalized patients in Pakistan showing unadjusted lower mortality with combined ivermectin and doxycycline treatment. Details o…		
Apr 19	Revie…	*DiNicolantonio et al., Open H…*	review	Anti-inflammatory activity of ivermectin in late-stage COVID-19 may reflect act…
	Details	Review suggesting that the effectiveness of ivermectin in the cytokine storm phase of COVID-19 may be, at least in part, an anti-inflammatory effect me…		
Apr 17	Early	*Loue et al., J. Infectious Dise…*	death, ↓70.0%, p=0.34	Ivermectin and COVID-19 in Care Home: Case Report
	Details	Small quasi-randomized (patient choice) study with 25 PCR+ patients in a nursing home offered ivermectin, of which 10 chose to be treated. The mean …		
Apr 16	PrEP…	*Morgenstern et al., medRxiv, …*	hosp., ↓80.0%, p=0.50	Retrospective cohort study of Ivermectin as a SARS-CoV-2 pre-exposure proph…
	Details	Propensity matched retrospective prophylaxis study of healthcare workers in the Dominican Republic showing significantly lower cases with treatment, …		
Apr 14	PrEP…	*Seet et al., International Jour…*	severe case, ↓49.8%, p=0.01	Positive impact of oral hydroxychloroquine and povidone-iodine throat spray f…
	Details	Prophylaxis RCT in Singapore with 3,037 low risk patients, showing lower serious cases, lower symptomatic cases, and lower confirmed cases of COVI…		
Apr 10	In Sili…	*Bello et al., Journal of Biomolecular Structure and Dynamics, doi:10.…*		Elucidation of the inhibitory activity of ivermectin with host nuclear importin α …
	Details	*In Silico* analysis finding that the *in vitro* activity of ivermectin may explained by acting as an inhibitor of importin-α, dimeric 3CLpro, and Nsp9.		
Apr 3	Revie…	*Turkia, M., Research Gate (Re…*	review	A timeline of ivermectin-related events in the COVID-19 pandemic
	Details	An extensive timeline of ivermectin-related events from April 2020 to March 2021 including studies, news, health authority decisions, biased news cover…		
Apr 1	Early	*Mourya et al., Int. J. Health a…*	viral+, ↓89.4%, p<0.0001	Comparative Analytical Study of Two Different Drug Regimens in Treatment of …
	Details	Retrospective 100 patients in India with 50 treated with ivermectin, and SOC for all patients including HCQ+AZ, showing much higher viral clearance wit…		
Mar 30	Revie…	*Wehbe et al., Front. Immunol…*	review	Repurposing Ivermectin for COVID-19: Molecular Aspects and Therapeutic Pos…
	Details	Review of how ivermectin was identified for use in COVID-19, mechanisms of action, and selected clinical trials.		
Mar 30	Early	*Chahla et al., Research Squar…*	no disch., ↓86.9%, p=0.004	Cluster Randomised Trials - Ivermectin Repurposing For COVID-19 Treatment …
	Details	Cluster RCT outpatients in Argentina showing signficantly faster recovery with ivermectin. There were no deaths. Cluster RCT where outpatients in Tucu…		
Mar 29	Meta	*Kow et al., Pharmacological …*	meta-analysis	The association between the use of ivermectin and mortality in patients with C…
	Details	Small meta analysis of 6 RCTs showing mortality OR 0.21 [0.11-0.42]. Authors do not include two more recent RCTs with mortality results, 10 other stu…		
Mar 26	PrEP…	*Tanioka et al., medRxiv, doi:1…*	death, ↓88.2%, p=0.002	Why COVID-19 is not so spread in Africa: How does Ivermectin affect it?
	Details	Retrospective study of the 31 onchocerciasis-endemic countries using the community-directed treatment with ivermectin (CDTI) and the 22 non-endemi…		
Mar 25	In Sili…	*Udofia et al., Network Modeling Analysis in Health Informatics and …*		In silico studies of selected multi-drug targeting against 3CLpro and nsp12 RN…
	Details	*In Silico* analysis finding that ivermectin had the highest binding energy against the 3CLpro of SARS-CoV-2 and RdRps of both SARS-CoV and SARS-Co…		
Mar 25	In Sili…	*Choudhury et al., Future Medicine, doi:10.2217/fvl-2020-0342 (Peer…*		Exploring the binding efficacy of ivermectin against the key proteins of SARS-C…
	Details	*In Silico* analysis finding that ivermectin has high binding affinity for the SARS-CoV-2 viral spike protein, main protease, replicase, and human TMPRSS…		
Mar 25	Late	*Huvemek Press Release (Pre…*	no improv., ↓31.6%, p=0.28	Kovid-19 - Huvemek® Phase 2 clinical trial
	Details	Phase 2 results from a multicenter RCT of hospitalized patients in Bulgaria showing faster viral clearance, greater clinical improvement, and improved …		
Mar 24	Revie…	*Yagisawa et al., The Japanes…*	review	Global trends in clinical studies of ivermectin in COVID-19
	Details	Review of ivermectin for COVID-19. Authors note that Kitasato University's project was expanded in response to the results of Caly et al. which had left …		
Mar 21	Early	*Emmerich et al., Int. J. Environ. Res. Public Health, doi:10.3390/ijer…*		Comparisons between the Neighboring States of Amazonas and Pará in Brazil …
	Details	Comparison between the two largest neighboring states in Brazil, Amazonas and Pará, showing more than 5 times lower mortality in Pará during the se…		
Mar 18	Late	*Del Franco et al., Journal of Biomedical Research and Clinical Invest…*		Ivermectin in Long-Covid Patients: A Retrospective Study
	Details	Retrospective 856 patients previously admitted to hospital for COVID-19 in Argentina, finding that ivermectin improved recovery from "long covid" symp…		
Mar 12	Early	*Roy et al., medRxiv, doi:10.11…*	recov. time, ↓5.6%, p=0.87	Outcome of Different Therapeutic Interventions in Mild COVID-19 Patients in a …
	Details	Retrospective database analysis of 56 mild COVID-19 patients, all treated with vitamin C, vitamin D, and zinc, comparing ivermectin + doxycycline (n=1…		
Mar 11	Meta	*Nardelli et al., Signa Vitae, do…*	death, ↓79.5%, p<0.0001	Crying wolf in time of Corona: the strange case of ivermectin and hydroxychlor…
	Details	Meta analysis of RCT mortality results showing RR 0.19, $p < 0.00001$.		
Mar 11	Meta	*Scheim et al., OSF Preprints (…*	meta-analysis	Ivermectin sales in Valle del Cauca, Colombia, patterns of AEs, and other back…
	Details	Analysis of several issues with López-Medina et al. including the atypical adverse effects in the control arm and population use of ivermectin.		
Mar 11	Meta	*Scheim et al., OSF Preprints (…*	meta-analysis	Protocol violations in López-Medina et al.: 38 switched ivermectin (IVM) and pl…
	Details	Report on protocol violations in López-Medina et al.		
Mar 10	In Vit…	*Yesilbag et al., Virus Researc…*	*in vitro*	Ivermectin also inhibits the replication of bovine respiratory viruses (BRSV, BPI…
	Details	*In Vitro* study showing that ivermectin can inhibit infection of bovine respiratory disease viral agents BCoV, BPIV-3, BVDV, BRSV and BoHV-1 at the conc…		
Mar 9	Late	*Pott-Junior et al., Toxicology …*	ventilation, ↓85.2%, p=0.25	Use of ivermectin in the treatment of Covid-19: a pilot trial
	Details	Very small RCT with 4 control patients and 28 ivermectin patients split across 3 different dosage levels, showing lower (non-statistically significant) IC…		

Mar 8	Early	*Chamie-Quintero et al., OSF Preprints (Preprint)*		Ivermectin for COVID-19 in Peru: 14-fold reduction in nationwide excess deaths…
	Details	Analysis of ivermectin use in Peru concluding that ivermectin most likely caused a 14 times reduction in excess deaths in Peru, prior to a 13 times incre…		
Mar 8	Late	*Guzman et al., medRxiv, doi:10.1101/2021.03.04.21252084 (Prepri…*		Factors associated with increased mortality in critically ill COVID-19 patients i…
	Details	Retrospective 196 critically ill patients in Mexico. Patients overlap with the existing RCT by Beltran-Gonzalez (NCT04391127). This preprint shows a lar…		
Mar 8	Late	*Galan et al., Pathogens and Global Health, doi:10.1080/20477724.2…*		Phase 2 randomized study on chloroquine, hydroxychloroquine or ivermectin i…
	Details	RCT 168 very late stage severe condition hospitalized patients comparing CQ, HCQ, and ivermectin not showing significant differences. Authors were u…		
Mar 5	Safety	*Descotes, J., ImmunoSafe Co…*	safety analysis	Medical Safety of Ivermectin
	Details	Safety analysis of >350 articles showing that ivermectin has an excellent safety profile. The author notes that "no severe adverse event has been report…		
Mar 4	Early	*López-Medina et al., JAMA, d…*	death, ↓66.8%, p=0.50	Effect of Ivermectin on Time to Resolution of Symptoms Among Adults With M…
	Details	An open letter, signed by >100 physicians, concluding this study is fatally flawed can be found at [1]. Phone survey based RCT with low risk patients, 20…		
Mar 1	In Sili…	*Saha et al., Structural Chemistry, doi:10.1007/s11224-021-01776-0 …*		The Binding mechanism of ivermectin and levosalbutamol with spike protein o…
	Details	*In SIlico* analysis predicting that ivermectin has a large binding affinity for the SARS-CoV-2 spike protein. Three different computer modeling techniques …		
Feb 23	Late	*Gonzalez et al., medRxiv, doi:…*	death, ↓14.4%, p=1.00	Efficacy and safety of Ivermectin and Hydroxychloroquine in patients with seve…
	Details	RCT late stage severe condition (93% SOFA ≥ 2, 96% APACHE ≥ 8) high comorbidity hospitalized patients in Mexico with 36 low dose ivermectin and 37…		
Feb 20	News	*BIRD Meeting 20th February …*	news	BIRD Meeting 20th February 2021
	Details	The British Ivermectin Recommendation Development (BIRD) panel, with dozens of multi-national scientists & doctors, issued sweeping recommendati…		
Feb 16	Early	*Elalfy et al., J. Med. Virol., doi…*	viral+, ↓86.9%, p<0.0001	Effect of a combination of Nitazoxanide, Ribavirin and Ivermectin plus zinc su…
	Details	Non-randomized controlled trial with 62 mild and early moderate patients with home treatment with ivermectin + nitazoxanide + ribavirin + zinc, showi…		
Feb 15	PrEP…	*Behera et al., Cureus 13:8, do…*	cases, ↓83.0%, p<0.001	Prophylactic Role of Ivermectin in Severe Acute Respiratory Syndrome Coronav…
	Details	Prospective prophylaxis study with 3,532 healthcare workers, 2,199 receiving two-dose ivermectin prophylaxis, showing adjusted relative risk of confir…		
Feb 12	Early	*Biber et al., medRxiv, doi:10.1…*	hosp., ↓70.2%, p=0.34	Favorable outcome on viral load and culture viability using Ivermectin in early …
	Details	Double blind RCT for mild-moderate COVID-19 outpatients in Israel showing significantly faster reduction in viral load with treatment, and lower hospita…		
Feb 10	Late	*Lima-Morales (Peer Reviewed)*	death, ↓77.7%, p<0.001	Effectiveness of a multidrug therapy consisting of ivermectin, azithromycin, m…
	Details	Prospective trial of 768 COVID-19 outpatients in Mexico, 481 treated with ivermectin, AZ, montelukast, and aspirin, and 287 control patients with variou…		
Feb 2	Early	*Mohan et al., Research Squar…*	no recov., ↓62.5%, p=0.27	Ivermectin in mild and moderate COVID-19 (RIVET-COV): a randomized, placeb…
	Details	RCT in India with low risk patients, comparing 24mg ivermectin, 12mg ivermectin, and placebo showing non-statistically significant improvements in re…		
Jan 29	Meta	*Cobos-Campos et al., Clin. R…*	meta-analysis	Potential use of ivermectin for the treatment and profilaxis of SARS-CoV-2 infe…
	Details	Review finding that there appears to be sufficient evidence to recommend ivermectin for the treatment of COVID-19, especially in the early stages of the …		
Jan 27	Meta	*Castaneda-Sabogal et al., m…*	meta-analysis	Outcomes of Ivermectin in the treatment of COVID-19: a systematic review and…
	Details	Student-written meta analysis of a very small subset of studies exhibiting very high bias and significant flaws. Some of the problems: - As of the public…		
Jan 25	In Sili…	*Eweas et al., Frontiers in Microbiology, doi:10.3389/fmicb.2020.592…*		Molecular Docking Reveals Ivermectin and Remdesivir as Potential Repurpose…
	Details	Molecular docking analysis showing that ivermectin efficiently binds to the viral S protein as well as the human cell surface receptors ACE-2 and TMPR…		
Jan 23	Anim…	*Errecalde et al., Journal of Ph…*	animal study	Safety and Pharmacokinetic Assessments of a Novel Ivermectin Nasal Spray F…
	Details	Animal study of a novel spray formulation of ivermectin, showing an advantage of the spray formulation in terms of fast attainment of high and persist…		
Jan 21	Early	*Chamie-Quintero et al., Preprint, doi:10.2139/ssrn.3765018 (Preprint)*		Sharp Reductions in COVID-19 Case Fatalities and Excess Deaths in Peru in Cl…
	Details	Analysis of ivermectin usage within states in Peru showing sharp reductions in COVID-19 deaths corresponding to the usage of ivermectin treatment.		
Jan 20	In Vit…	*Mody et al., Communications…*	*in vitro*	Identification of 3-chymotrypsin like protease (3CLPro) inhibitors as potential a…
	Details	Computational molecular modeling screening and *in vitro* analysis for inhibitory effects on SARS-CoV-2 specific 3CLpro enzyme, showing that ivermecti…		
Jan 19	Late	*Shahbaznejad et al., Clinical …*	death, ↑197.1%, p=1.00	Effect of ivermectin on COVID-19: A multicenter double-blind randomized contr…
	Details	RCT in Iran showing shorter time to recovery and shorter hospitalization time with ivermectin. There were no adverse effects. There was one death in th…		
Jan 19	Meta	*Hill et al., Research Square, d…*	death, ↓75.0%, p=0.0002	Meta-analysis of randomized trials of ivermectin to treat SARS-CoV-2 infection
	Details	Meta analysis of 18 ivermectin RCTs with 2,282 patients showing faster viral clearance (dose and duration dependent), improved clinical recovery, and l…		
Jan 16	Early	*Samaha et al., Viruses, doi:1…*	hosp., ↓85.7%, p=0.24	Effects of a Single Dose of Ivermectin on Viral and Clinical Outcomes in Asymp…
	Details	RCT 100 patients in Lebanon, showing significantly lower viral load at day 3, and lower hospitalization. All patients also took zinc and vitamin C. ChiCT…		
Jan 16	Early	*Bukhari et al., medRxiv, doi:1…*	viral+, ↓82.4%, p<0.0001	Efficacy of Ivermectin in COVID-19 Patients with Mild to Moderate Disease
	Details	RCT of relatively low risk hospitalized patients with 50 ivermectin and 50 control patients showing significantly faster viral clearance with treatment. 9 …		
Jan 13	Revie…	*Kory et al., Frontiers in Phar…*	review	Review of the Emerging Evidence Demonstrating the Efficacy of Ivermectin in t…
	Details	Meta analysis of ivermectin clinical studies and natural experiments where ivermectin has been widely used, showing efficacy of ivermectin in prophyla…		

Jan 12	Late	*Okumuş et al., BMC Infectiou…*	death, ↓33.3%, p=0.55	Evaluation of the Effectiveness and Safety of Adding Ivermectin to Treatment i…
	Details	Small RCT for severe COVID-19 comparing the addition of ivermectin to SOC (low dose HCQ+AZ+favipiravir), with 30 treatment and 30 control patients i…		
Jan 11	PrEP…	*Chahla et al., medRxiv, doi:1…*	m/s case, ↓95.2%, p=0.002	A randomized trial - intensive treatment based in ivermectin and iota-carragee…
	Details	Prophylaxis RCT for ivermectin and iota-carrageenan in Argentina, 117 healthcare workers treated with ivermectin and iota-carrageenan, and 117 contr…		
Jan 11	N/A	*Bousquet-Melou et al., Prepri…*	dosing study	Large Impact of obesity on the disposition of ivermectin, moxidectin and eprin…
	Details	Animal dosing study with an obese dog model concluding that ivermectin maintenance doses should be based on lean body weight and not the total b…		
Jan 10	Revie…	*Formiga et al., J. Control Rel…*	review	Ivermectin: an award-winning drug with expected antiviral activity against COV…
	Details	Review hypothesizing that micro- and nanotechnology-based formulations of ivermectin for the pulmonary delivery of ivermectin may be beneficial for …		
Jan 9	Early	*Ravikirti et al., Journal of Pha…*	death, ↓88.7%, p=0.12	Ivermectin as a potential treatment for mild to moderate COVID-19: A double bl…
	Details	RCT with 112 mild and moderate COVID-19 patients in India, showing lower mortality, ventilation, and ICU admission, although not statistically signific…		
Jan 8	Early	*Chamie, J. (News)*	news	COVID-19 in Mexico
	Details	Comparison of COVID-19 death rates in Mexico showing that the only state using ivermectin has a dramatically lower rate.		
Jan 6	Early	*Babalola et al., QJM: An Inter…*	viral+, ↓63.9%, p=0.11	Ivermectin shows clinical benefits in mild to moderate COVID19: A randomised…
	Details	Small RCT comparing ivermectin 6mg & 12mg q84hr with lopinavir/ritonavir, showing a statistically significant and dose dependent effect of ivermectin…		
Jan 6	PrEP…	*Hirsch et al., Microbiology & Infectious Diseases (Peer Reviewed)*		Ivermectin as Prophylaxis Against COVID-19 Retrospective Cases Evaluation
	Details	Report on ivermectin prophylaxis for healthcare workers in a hospital in Argentina, showing 0 cases in the 162 participants. Dosage was 0.2mg/kg wee…		
Jan 3	Early,…	*Lawrie et al., Preprint (Prepri…*	death, ↓83.0%, p<0.0001	Ivermectin reduces the risk of death from COVID-19 – a rapid review and meta-…
	Details	Meta analysis confirming the effectiveness of ivermectin for COVID-19, showing ivermectin treatment mortality relative risk RR 0.17 [0.18-0.35] and pro…		
Dec 31 2020	Late	*Wijaya et al., Cermin Dunia Kedokteran, 47:7 (Peer Reviewed)*		Ivermectin as a Potential Therapeutic Agent for COVID-19 – case studies
	Details	Case report on 3 confirmed cases of COVID-19 with significant clinical and radiological improvement after a single dose of ivermectin.		
Dec 31 2020	Anim…	*Madrid et al., Heliyon, doi:10.…*	animal study	Safety of oral administration of high doses of ivermectin by means of biocomp…
	Details	*In vivo* analysis of the safety of high dose ivermectin with a Corydoras fish animal model.		
Dec 30 2020	Revie…	*McCullough et al., Reviews i…*	review	Multifaceted highly targeted sequential multidrug treatment of early ambulator…
	Details	Review urging early treatment of COVID-19 with sequential multidrug treatment that has been shown to be safe and effective. Proposed treatment inclu…		
Dec 30 2020	Early	*Procter et al., Reviews in Cardiovascular Medicine, doi:10.31083/j.rc…*		Clinical outcomes after early ambulatory multidrug therapy for high-risk SARS-…
	Details	Retrospective 922 outpatients, with 320 treated early due to age>50 or comorbidities, showing 2.2% hospitalization and 0.3% death, which authors note…		
Dec 27 2020	Meta	*Hill, A., Preprint (Preprint) (m…*	meta-analysis	Meta-analysis of clinical trials of ivermectin to treat COVID-19 infection
	Details	WHO-funded meta analysis showing ivermectin treatment mortality relative risk RR 0.17 [0.08-0.35] for RCTs and RR 0.28 [0.13-0.62] for RCTs and obse…		
Dec 24 2020	In Vit…	*Jeffreys et al., bioRxiv, doi:10…*	*in vitro*	Remdesivir-Ivermectin combination displays synergistic interaction with impro…
	Details	*In Vitro* study showing enhanced antiviral activity of ivermectin and remdesivir in combination.		
Dec 20 2020	PrEP…	*Vallejos et al., Preliminary Re…*	cases, ↓73.4%, p<0.0001	Ivermectina en agentes de salud e IVERCOR COVID19
	Details	Report on ivermectin prophylaxis in a hospital in Argentina showing lower cases for healthcare workers taking ivermectin. Preliminary results from: [1].		
Dec 18 2020	Early,…	*Kory et al., FLCCC Alliance (P…*	death, ↓69.0%, p<0.0001	Review of the Emerging Evidence Demonstrating the Efficacy of Ivermectin in t…
	Details	Meta analysis of ivermectin clinical studies and natural experiments where ivermectin has been widely used, showing efficacy of ivermectin in prophyla…		
Dec 15 2020	PrEP…	*Alam et al., European Journa…*	cases, ↓90.6%, p<0.0001	Ivermectin as Pre-exposure Prophylaxis for COVID-19 among Healthcare Provi…
	Details	91% reduction in COVID-19 cases with ivermectin prophylaxis. 118 healthcare workers in Bangladesh, 58 receiving ivermectin 12mg monthly, showing …		
Dec 15 2020	Early	*Afsar et al., SSRN (Preprint)*	symptoms, ↓92.2%, p=0.04	Ivermectin Use Associated with Reduced Duration of COVID-19 Febrile Illness i…
	Details	Small 95 patient study in Pakistan adding ivermectin to standard of care (HCQ+AZ) for outpatients with mild/moderate suspected COVID-19, showing f…		
Dec 11 2020	Early	*Hussain et al., International Journal of Molecular and Immuno Onco…*		Outcome of ivermectin and doxycycline in cancer patients with COVID-19: A po…
	Details	Small case study of ivermectin + doxycycline with 8 cancer patients, with all patients becoming PCR- by day 6 when tested again.		
Dec 7 2020	Early	*Chaccour et al., EClinicalMed…*	symp. prob., ↓52.9%, p<0.05	The effect of early treatment with ivermectin on viral load, symptoms and hum…
	Details	Tiny RCT for early treatment of mild COVID-19 in low risk patients, with 12 400mcg/kg single dose ivermectin patients and 12 control patients, showing…		
Dec 4 2020	Meta	*Kalfas et al., medRxiv, doi:10.…*	meta-analysis	The therapeutic potential of ivermectin for COVID-19: a systematic review of m…
	Details	Review of ivermectin mechanisms and 8 trials, showing positive mortality benefit, reduced time to clinical recovery, reduced incidence of disease progre…		
Dec 4 2020	In Vit…	*Surnar et al., ACS Pharmacol.…*	*in vitro*	Clinically Approved Antiviral Drug in an Orally Administrable Nanoparticle for C…
	Details	*In Vitro* analysis of ivermectin with orally administrable nanoparticles showing efficacy for decreasing expression of the viral spike protein and ACE2. In…		
Dec 2 2020	Early	*Ahmed et al., International Jo…*	symptoms, ↓85.0%, p=0.09	A five day course of ivermectin for the treatment of COVID-19 may reduce the d…
	Details	Small 72 patient RCT of ivermectin and ivermectin + doxycycline showing faster recovery with ivermectin. Ivermectin group: 12mg daily for 5 days Iver…		

Dec 2 2020	Early	*Chamie, J. (News)*	news	The effect of using ivermectin to control COVID-19 in Chiapas
	Details	After starting to distribute ivermectin in drug kits in July, the Mexican state of Chiapas has seen a dramatic divergence from other states with much low…		
Dec 1 2020	Early	***Alonso** et al., (Preprint)*	death, ↓**91.8%**, p=0.009	COVID-19: Uso de ivermectina
	Details	Observational study in Argentina showing significantly lower mortality in the 60 days after adopting ivermectin compared to the 60 days before, relative…		
Nov 28 2020	PrEP…	***Bernigaud** et al., Annals of D…*	death, ↓**99.4%**, p=0.08	Ivermectin benefit: from scabies to COVID-19, an example of serendipity
	Details	69 residents of a French care home, median age 90, were treated with ivermectin for a scabies outbreak. 3,062 residents in 45 nearby comparable home…		
Nov 28 2020	PrEP…	***Hellwig** et al., International J…*	cases, ↓**78.0%**, p<0.02	A COVID-19 Prophylaxis? Lower incidence associated with prophylactic admini…
	Details	Analysis of COVID-19 cases vs. widespread prophylactic use of ivermectin for parasitic infections showing significantly lower incidence of COVID-19 ca…		
Nov 24 2020	Late	***Niaee** et al., Asian Pacific Jo…*	death, ↓**81.8%**, p=0.001	Ivermectin as an adjunct treatment for hospitalized adult COVID-19 patients: A …
	Details	82% lower mortality with ivermectin. RCT with 180 hospitalized patients showing reduced mortality and hospital stay with ivermectin, with a wide marg…		
Nov 22 2020	Anim…	***de Melo** et al., EMBO Mol. M…*	animal study	Attenuation of clinical and immunological outcomes during SARS-CoV-2 infect…
	Details	Animal study showing that standard doses of ivermectin prevented clinical deterioration, reduced olfactory deficit, and limited the inflammation of the u…		
Nov 18 2020	Late	***Budhiraja** et al., medRxiv, doi…*	death, ↓**99.1%**, p=0.04	Clinical Profile of First 1000 COVID-19 Cases Admitted at Tertiary Care Hospita…
	Details	Retrospective 976 hospitalized patients with 34 treated with ivermectin showing ivermectin mortality relative risk RR 0.13, p = 0.04.		
Nov 17 2020	PrEP…	***Carvallo** et al., Journal of Bio…*	cases, ↓**99.9%**, p<0.0001	Study of the Efficacy and Safety of Topical Ivermectin + Iota-Carrageenan in th…
	Details	Prophylaxis study using ivermectin and iota-carrageenan showing 0 of 788 cases from treated healthcare workers, compared to 237 of 407 control. Th…		
Nov 14 2020	Late	***Spoorthi** et al., IAIM, 2020, 7:…*	recov. time, ↓**21.1%**, p=0.03	Utility of Ivermectin and Doxycycline combination for the treatment of SARSCo…
	Details	100 patient prospective trial of ivermectin + doxycycline showing reduced time to symptom resolution and shorter hospital stay with treatment.		
Nov 13 2020	Late	***Elgazzar** et al., Research Square, doi:10.21203/rs.3.rs-100956/v2 (P…*		Efficacy and Safety of Ivermectin for Treatment and prophylaxis of COVID-19 P…
	Details	This study was withdrawn.		
Nov 11 2020	Late	***Camprubí** et al., PLoS ONE, 1…*	ventilation, ↓**40.0%**, p=0.67	Lack of efficacy of standard doses of ivermectin in severe COVID-19 patients
	Details	Tiny 26 patients retrospective study of ivermectin 200 µg/kg, median 12 days after symptoms, not showing significant differences. Authors suggest the…		
Nov 10 2020	Revie…	***Turkia**, M., ResearchGate (Re…*	review	FLCCC Alliance MATH+ ascorbic acid and I-MASK+ ivermectin protocols for CO…
	Details	Review suggesting that ivermectin should be used based on existing data suggesting significant benefits, and that waiting for additional data may resu…		
Nov 4 2020	Early	***Cadegiani** et al., New Microb…*	death, ↓**78.3%**, p=0.50	Early COVID-19 Therapy with azithromycin plus nitazoxanide, ivermectin or hy…
	Details	Comparison of HCQ, nitazoxanide, and ivermectin showing similar effectiveness for overall clinical outcomes in COVID-19 when used before seven day…		
Nov 3 2020	Early,…	***Morgenstern** et al., J. Clinical Trials (preprint 11/3) (Peer Reviewed)*		The Use of Compassionate Ivermectin in the Management of SymptomaticOut…
	Details	Retrospective 3,099 outpatients treated with ivermectin in an ER. Of 2,706 treated on an outpatient basis, 18 were subsequently hospitalized, 2 in the IC…		
Nov 3 2020	PrEP…	***Behera** et al., PLoS ONE, doi:…*	cases, ↓**53.8%**, p<0.0001	Role of ivermectin in the prevention of SARS-CoV-2 infection among healthcare…
	Details	Retrospective matched case-control prophylaxis study for HCQ, ivermectin, and vitamin C with 372 healthcare workers, showing lower COVID-19 incide…		
Nov 2 2020	Anim…	***Arévalo** et al., Scientific Repo…*	animal study	Ivermectin reduces in vivo coronavirus infection in a mouse experimental model
	Details	Mouse study showing ivermectin reducing MHV viral load and disease. MHV is a type 2 family RNA coronavirus similar to SARS-CoV2.		
Oct 31 2020	PrEP…	***Chang** et al., ResearchGate (Preprint)*		COVID-19: Effectiveness of pre-exposure prophylaxis with ivermectin in expose…
	Details	Pre-exposure prophylaxis study with 129 people split into high/low exposure groups, with each group split into different dosing regimens, showing high…		
Oct 31 2020	Early	***Szente Fonseca** et al., Travel …*	hosp., ↑**13.9%**, p=0.45	Risk of Hospitalization for Covid-19 Outpatients Treated with Various Drug Reg…
	Details	Retrospective 717 patients in Brazil showing OR 1.17 [0.72-1.90] for ivermectin. This paper focuses on HCQ, event counts for ivermectin are not provide…		
Oct 26 2020	Late	***Hashim** et al., Iraqi Journal o…*	death, ↓**91.7%**, p=0.03	Controlled randomized clinical trial on using Ivermectin with doxycycline for tr…
	Details	RCT 70 ivermectin+doxycycline patients and 70 control patients showing reduced time to recovery and reduced mortality with treatment. Earlier treatm…		
Oct 22 2020	PrEP…	***Guerrero** et al., Colombia Médica, doi:10.25100/cm.v51i4.4613 (Pee…*		COVID-19: The Ivermectin African Enigma
	Details	Study of African Programme for Onchocerciasis Control (APOC) countries, which used ivermectin, with non-APOC countries in Africa, showing 28% lowe…		
Oct 19 2020	PrEP…	***Carvallo** et al., NCT04425850…*	cases, ↓**96.3%**, p<0.0001	Usefulness of Topic Ivermectin and Carrageenan to Prevent Contagion of Covi…
	Details	Prophylaxis study using ivermectin and carrageenan showing 0 of 131 cases from treated healthcare workers, compared to 11 of 98 control. The effect …		
Oct 13 2020	Anim…	***Chaccour** et al., Scientific Re…*	animal study	Nebulized ivermectin for COVID-19 and other respiratory diseases, a proof of c…
	Details	Study showing that nebulized ivermectin can reach pharmacodynamic concentrations in the lung tissue of rats. Authors note that additional experimen…		
Oct 13 2020	Late	***Rajter** et al., Chest, doi:10.10…*	death, ↓**46.0%**, p=0.04	Use of Ivermectin is Associated with Lower Mortality in Hospitalized Patients …
	Details	Retrospective 280 hospitalized patients showing lower mortality with ivermectin (13.3% vs 24.5%), propensity matched odds ratio OR 0.47 [0.22-0.99], …		
Oct 9 2020	Early	***Mahmud** et al., Journal of Int…*	death, ↓**85.7%**, p=0.25	Ivermectin in combination with doxycycline for treating COVID-19 symptoms: a…
	Details	RCT for ivermectin+doxycycline showing improvements in mortality, recovery, progression, and virological cure. 183 treatment and 183 control patients …		

Oct 8 2020	In Sili…	*Francés-Monerris et al., ChemRxiv, doi:10.26434/chemrxiv.1278225…*		Has Ivermectin Virus-Directed Effects against SARS-CoV-2? Rationalizing the A…
	Details	*In silico* study showing that ivermectin is capable of interfering in different key steps of the SARS-CoV-2 replication cycle.		
Oct 8 2020	Late	*Soto-Becerra et al., medRxiv, …*	death, ↓17.1%, p=0.01	Real-World Effectiveness of hydroxychloroquine, azithromycin, and ivermectin …
	Details	Retrospective database study of 5683 patients, 692 received HCQ/CQ+AZ, 200 received HCQ/CQ, 203 received ivermectin, 1600 received AZ, 358 receiv…		
Sep 30 2020	Late	*Chachar et al., International J…*	no recov., ↓10.0%, p=0.50	Effectiveness of Ivermectin in SARS-CoV-2/COVID-19 Patients
	Details	Small RCT with 25 ivermectin and 25 control patients, not finding a significant difference in recovery at day 7.		
Sep 24 2020	Late	*Khan et al., Archivos de Bron…*	death, ↓87.0%, p<0.05	Ivermectin treatment may improve the prognosis of patients with COVID-19
	Details	Retrospective 115 ivermectin patients and 133 control patients showing significantly lower death and faster viral clearance. Some potential issues and …		
Sep 22 2020	In Vit…	*Li et al., J. Cellular Physiolog…*	*in vitro*	Quantitative proteomics reveals a broad-spectrum antiviral property of iverme…
	Details	*In Vitro* study showing Ivermectin is a safe wide-spectrum antiviral against SARS-CoV-2, human papillomavirus (HPV), Epstein–Barr virus (EBV), and HI…		
Sep 15 2020	Early	*Carvallo et al., Journal of Cli…*	death, ↓85.4%, p=0.08	Safety and Efficacy of the Combined Use of Ivermectin, Dexamethasone, Enoxa…
	Details	Prospective trial of ivermectin, dexamethasone, enoxaparin, and aspirin, showing no hospitalization for mild cases, and lower mortality for moderate/se…		
Sep 15 2020	Revie…	*Jans et al., Cells 2020, 9:9, 2…*	review	Ivermectin as a Broad-Spectrum Host-Directed Antiviral: The Real Deal?
	Details	Review of ivermectin as a host-directed broad-spectrum antiviral agent for a range of viruses, including SARS-CoV-2. Cell culture experiments show rob…		
Sep 9 2020	In Slli…	*Swargiary, A., Research Square, doi:10.21203/rs.3.rs-73308/v1 (Pre…*		Ivermectin as a promising RNA-dependent RNA polymerase inhibitor and a the…
	Details	*In Silico* study showing high binding affinity of ivermectin with SARS-CoV-2 RNA-dependent RNA polymerase, suggesting ivermectin as an inhibitor of R…		
Sep 6 2020	Revie…	*DiNicolantonio et al., Open H…*	review	Ivermectin may be a clinically useful anti-inflammatory agent for late-stage CO…
	Details	Review suggesting that ivermectin may be useful for late stage COVID-19. Authors note that ivermectin, in doses at or modestly above the standard clin…		
Sep 3 2020	Late	*Podder et al., IMC J. Med. Sci…*	recov. time, ↓16.1%, p=0.34	Outcome of ivermectin treated mild to moderate COVID-19 cases: a single-cent…
	Details	Small RCT with 32 ivermectin patients and 30 control patients. The mean recovery time after enrolment in the intervention arm was 5.31 ± 2.48 days vs…		
Aug 31 2020	Late	*Kishoria et al., Paripex - India…*	no disch., ↑7.5%, p=1.00	Ivermectin as adjuvant to hydroxychloroquine in patients resistant to standard…
	Details	Small RCT of hospitalized patients in India with 19 ivermectin patients and 13 control patients, with all receiving SOC including HCQ, showing no signifi…		
Aug 28 2020	PrEP…	*Shouman et al., Journal of Cl…*	symp. case, ↓91.3%, p<0.001	Use of Ivermectin as a Potential Chemoprophylaxis for COVID-19 in Egypt: A R…
	Details	PEP trial for asymptomatic close contacts of COVID-19 patients, 203 ivermectin patients and 101 control patients. 7.4% of contacts developed COVID-1…		
Aug 15 2020	Early	*Espitia-Hernandez et al., Bio…*	viral+, ↓97.2%, p<0.0001	Effects of Ivermectin-azithromycin-cholecalciferol combined therapy on COVID…
	Details	Small study with 28 patients treated with ivermectin + AZ + cholecalciferol and 7 control patients. All treated patients were PCR- at day 10 while all cont…		
Aug 14 2020	Late	*Bhattacharya et al., Int. J. Scientific Research, doi:10.36106/ijsr/723…*		Observational Study on Clinical Features, Treatment and Outcome of COVID 19…
	Details	Retrospective 148 hospitalized patients showing triple therapy with ivermectin + atorvastatin + N-acetylcysteine resulted in a 1.35% case fatality rate w…		
Jul 31 2020	Revie…	*Vora et al., Indian Journal of …*	review	White paper on Ivermectin as a potential therapy for COVID-19
	Details	Panel review of ivermectin reporting that "ivermectin in the dose of 12mg BD alone or in combination with other therapy for 5–7 days may be considere…		
Jul 31 2020	Late	*Chang et al., ResearchGate (Preprint)*		Post-acute or prolonged COVID-19: ivermectin treatment for patients with persi…
	Details	Report on 33 patients with persistent or post-acute symptoms treated with ivermectin, showing a high rate of clinical improvement.		
Jul 31 2020	Theo…	*Chang et al., ResearchGate, d…*	theory	COVID-19: Post-exposure prophylaxis with ivermectin in contacts. At Homes, P…
	Details	Proposed PEP protocol based on ivermectin.		
Jul 31 2020	Late	*Alam et al., Journal of Bangladesh College of Physicians and Surge…*		A Case Series of 100 COVID-19 Positive Patients Treated with Combination of I…
	Details	Case study of 100 patients treated with ivermectin and doxycycline, with no ICU admission, deaths, or serious side effects reported.		
Jul 31 2020	Late	*Rahman et al., J. Bangladesh Coll. Phys. Surg. 38, 5-9, doi:10.3329/…*		Comparison of Viral Clearance between Ivermectin with Doxycycline and Hydr…
	Details	Comparison of 200 patients treated with ivermectin + doxycycline and 200 treated with HCQ + AZ. The HCQ + AZ group had more severe cases at basel…		
Jul 14 2020	Early	*Chowdhury et al., Eurasian J…*	hosp., ↓80.6%, p=0.23	A Comparative Study on Ivermectin-Doxycycline and Hydroxychloroquine-Azit…
	Details	Small 116 patient RCT with low-risk patients comparing ivermectin+doxycycline and HCQ+AZ, showing lower hospitalization, higher viral clearance, an…		
Jul 8 2020	Late	*Gorial et al., medRxiv, doi:10.…*	death, ↓71.0%, p=1.00	Effectiveness of Ivermectin as add-on Therapy in COVID-19 Management (Pilo…
	Details	Small trial of hospitalized patients with 16 of 87 patients being treated with ivermectin showing a significantly lower mean hospital stay with ivermecti…		
Jun 19 2020	In Sili…	*Lehrer et al., In Vivo, 34:5, 3023-3026, doi:10.21873/invivo.12134*		Ivermectin Docks to the SARS-CoV-2 Spike Receptor-binding Domain Attached …
	Details	*In silico* analysis showing ivermectin docking which may interfere with the attachment of the spike to the human cell membrane.		
Jun 16 2020	Early	*Ramos et al., Preprint (Preprint)*		Intervención de la Ivermectina Pre-Hospitalaria para la Modificación de la Evol…
	Details	Prospective study of 63 outpatients in Peru treated with ivermectin, reporting significant improvement within 24 hours.		
Jun 12 2020	Revie…	*Heidary et al., The Journal of …*	review	Ivermectin: a systematic review from antiviral effects to COVID-19 complement…
	Details	Review of the antimicrobial, antiviral, and anti-cancer properties of ivermectin. Antiviral effects have been reported for Zika, dengue, yellow fever, West N…		

May 20 2020	Dosi…	***Arshad*** *et al., Clinical Pharma…*	dosing study	Prioritization of Anti-SARS-Cov-2 Drug Repurposing Opportunities Based on Pl…
	Details	Pharmacokinetic analysis predicting that ivermectin will achieve lung concentration over 10 times higher than the reported EC_{50}.		
May 2 2020	Early	***Chang****, G., Research Gate, doi:10.13140/RG.2.2.34689.48482/7 (Pr…*		Inclusión de la ivermectina en la primera línea de acción terapéutica para COVI…
	Details	Peru observational case study of 7 patients treated with ivermectin, showing improvement and resolution of fever within 48 hours, and 100% recovery.		
Apr 21 2020	Revie…	***Bray*** *et al., Antiviral Res., doi:…*	review	Ivermectin and COVID-19: A report in Antiviral Research, widespread interest, a…
	Details	Responses to Caly et al., and the author's reply. The original authors note that "ivermectin's key direct target in mammalian cells is a not a viral compon…		
Apr 3 2020	In Vit…	***Caly*** *et al., Antiviral Research,…*	*in vitro*	The FDA-approved drug ivermectin inhibits the replication of SARS-CoV-2 in vit…
	Details	*In Vitro* study showing that ivermectin is an inhibitor of SARS-CoV-2, with a single addition to Vero-hSLAM cells 2h post infection with SARS-CoV-2 able …		
2013	N/A	***Guzzo*** *et al., J. Clinical Phar…*	safety analysis	Safety, Tolerability, and Pharmacokinetics of Escalating High Doses of Ivermec…
	Details	Safety study concluding that ivermectin was generally well tolerated, with no indication of associated CNS toxicity for doses up to 10 times the highest …		

For search methods, inclusion criteria, effect extraction criteria (more serious outcomes have priority), PRISMA answers, and statistical methods see ivmmeta.com. Meta, Theory, Safety, Review, and News items are not included in the study count. There is a total of 165 items. Studies with preprints and journal versions are listed under the earlier preprint date.

Please send us corrections, updates, or comments. *Vaccines and treatments are both extremely valuable and complementary. All practical, effective, and safe means should be used. Elimination of COVID-19 is a race against viral evolution. No treatment, vaccine, or intervention is 100% available and effective for all current and future variants. Denying the efficacy of any method increases the risk of COVID-19 becoming endemic; and increases mortality, morbidity, and collateral damage. We do not provide medical advice. Before taking any medication, consult a qualified physician who can provide personalized advice and details of risks and benefits based on your medical history and situation. Treatment protocols for physicians are available from the FLCCC.*

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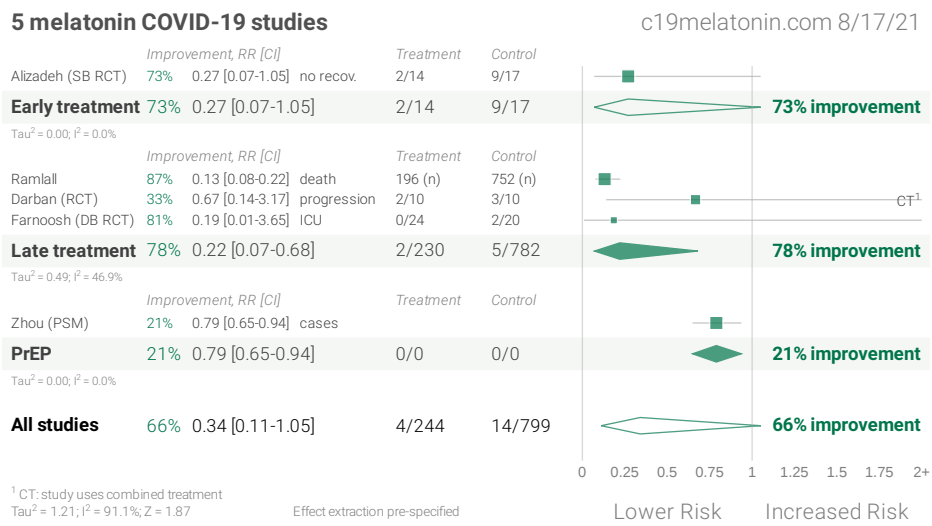

Database of all melatonin COVID-19 studies. Submit updates/corrections.

Jul 20	Revie…	***Ramos*** *et al., Antioxidants, d…*	review	The Coronavirus Disease 2019 (COVID-19): Key Emphasis on Melatonin Safety…
	Details	Review of melatonin for COVID-19 discussing mechanisms of action and ongoing trials.		
Jul 17	Revie…	***Camp*** *et al., Journal of Inorg…*	review	Melatonin interferes with COVID-19 at several distinct ROS-related steps
	Details	Review discussing how melatonin may improve COVID-19 prognosis by acting to reduce oxygen deficiency and hypoxia, vitamin B12 deficiency, NO de…		
Jul 2	Theo…	***Sen****, A., OSF Preprints, doi:0.…*	theory	Deficient synthesis of melatonin in COVID-19 can impair the resistance of coro…
	Details	Proposal that melatonin deficiency plays a significant role in COVID-19 associated mucormycosis.		
Jun 23	Late	***Farnoosh*** *et al., Archives of …*	ICU, ↓**81.5%**, p=0.20	Efficacy of a Low Dose of Melatonin as an Adjunctive Therapy in Hospitalized …
	Details	RCT 44 hospitalized patients in Iran, 24 treated with melatonin, showing faster recovery with treatment. There was no mortality.		
Jun 10	Revie…	***Cross*** *et al., Endocrine Practi…*	review	Melatonin for the Early Treatment of COVID-19: A Narrative Review of Current E…
	Details	Review of the potential benefits of melatonin for COVID-19.		
May 29	Early	***Alizadeh*** *et al., Iranian Journ…*	no recov., ↓**73.0%**, p=0.06	A Pilot Study on Controlling Coronavirus Disease 2019 (COVID-19) Inflammati…
	Details	Small RCT 31 mild/moderate COVID-19 outpatients in Iran, 14 treated with melatonin, showing improved recovery with treatment.		
May 17	Late	***Hosseini*** *et al., European Journal of Pharmacology, doi:10.1016/j.ej…*		Evaluation of Th1 and Th2 mediated cellular and humoral immunity in patient…
	Details	40 hospitalized patients in Iran, 20 treated with melatonin, showing that melatonin attenuated inflammatory cytokines.		
Mar 19	Revie…	***DiNicolantonio*** *et al., Open H…*	review	Melatonin may decrease risk for and aid treatment of COVID-19 and other RNA…
	Details	Review of melatonin for COVID-19 and the result of Ramlall et al., suggesting that vitamin D, zinc, and melatonin supplementation may have general uti…		
Dec 23 2020	Late	***Brusco*** *et al., Melatonin Research, doi:10.32794/mr11250089 (Peer …*		Efficacy of melatonin in non-intensive care unit patients with COVID-19 pneum…
	Details	Review of melatonin for COVID-19 along with preliminary data suggesting efficacy of melatonin for COVID-19 pneumonia patients.		
Dec 15 2020	Late	***Darban*** *et al., Journal of Cell…*	progression, ↓**33.3%**, p=1.00	Efficacy of High Dose Vitamin C, Melatonin and Zinc in Iranian Patients with A…
	Details	Small RCT in Iran with 20 ICU patients, 10 treated with high-dose vitamin C, melatonin, and zinc, not showing significant differences. IRCT2015122802…		
Nov 6 2020	PrEP	***Zhou*** *et al., PLOS Biology, doi…*	cases, ↓**21.1%**, p=0.0005	A network medicine approach to investigation and population-based validatio…
	Details	PSM observational study with a database of 26,779 patients in the USA, showing significantly lower risk of PCR+ with melatonin usage.		
Oct 18 2020	Late	***Ramlall*** *et al., medRxiv, doi:1…*	death, ↓**86.9%**, p<0.0001	Melatonin is significantly associated with survival of intubated COVID-19 patie…
	Details	Retrospective 948 intubated patients, 196 treated with melatonin, showing lower mortality with treatment.		
Jun 15 2020	Late	***Castillo*** *et al., Melatonin Research, doi:10.32794/mr11250063 (Peer…*		Melatonin as adjuvant treatment for coronavirus disease 2019 pneumonia pat…
	Details	Report on the use of high-dose melatonin in 10 pneumonia patients, showing clinical stabilization and/or improvement for all patients within 4-5 days. …		
May 15 2020	Revie…	***Reiter*** *et al., Frontiers in Medi…*	review	Therapeutic Algorithm for Use of Melatonin in Patients With COVID-19
	Details	Review of melatonin's action as an antiinflammatory, antioxidant, and antiviral (against other viruses) agent, and proposed therapeutic algorithm for us…		
May 4 2020	Revie…	***Charaa*** *et al., SSRN, doi:10.2…*	review	Prophylactic Treatment Protocol against the Severity of COVID-19 Using Melat…
	Details	Review of the potential benefits of melatonin for COVID-19, and a proposed prophylactic treatment protocol.		
Apr 29 2020	Revie…	***Shneider*** *et al., International …*	review	Can melatonin reduce the severity of COVID-19 pandemic?
	Details	Review of the potential benefits of melatonin for COVID-19.		
Mar 23 2020	Revie…	***Zhang*** *et al., Life Sciences, d…*	review	COVID-19: Melatonin as a potential adjuvant treatment
	Details	Review of the potential benefits of melatonin for COVID-19.		

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1 molnupiravir COVID-19 study

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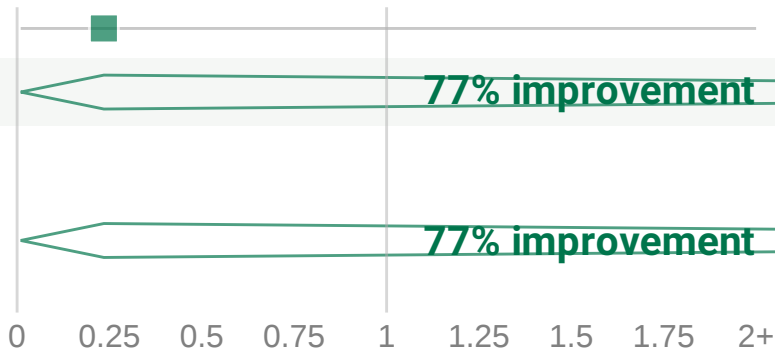
	Improvement, RR [CI]			Treatment	Control
Fischer	77%	0.23 [0.01-5.69]	death	0/140	1/62
Early treatment	77%	0.23 [0.01-5.69]		0/140	1/62
Tau^2 = 0.00; I^2 = 0.0%					
All studies	77%	0.23 [0.01-5.69]		0/140	1/62



Tau^2 = 0.00; I^2 = 0.0%; Z = 0.89

Effect extraction pre-specified

Database of all molnupiravir COVID-19 studies. Submit updates/corrections.

Jun 18
Early ***Fischer*** *et al., medRxiv, doi:1...* **death, ↓76.5%, p=0.31** Molnupiravir, an Oral Antiviral Treatment for COVID-19
Details RCT 202 outpatients in the USA showing significantly faster viral clearance, but no significant differences in symptom duration or severity. NCT044055...

May 7
In Vit... ***Zhou*** *et al., The Journal of Inf...* ***in vitro*** β-D-N4-hydroxycytidine Inhibits SARS-CoV-2 Through Lethal Mutagenesis But ...
Details *In Vitro* study showing that NHC (initial metabolite of molnupiravir) has high antiviral activity against SARS-CoV-2, but also shows host mutational acti...

Apr 15
Late ***Merck****, News Release (Preprint)* Merck and Ridgeback Biotherapeutics Provide Update on Progress of Clinical ...
Details News release reporting that the trial of molnupiravir with hospitalized patients (NCT04575584) has been discontinued because data indicates it is unlik...

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6 nitazoxanide COVID-19 studies

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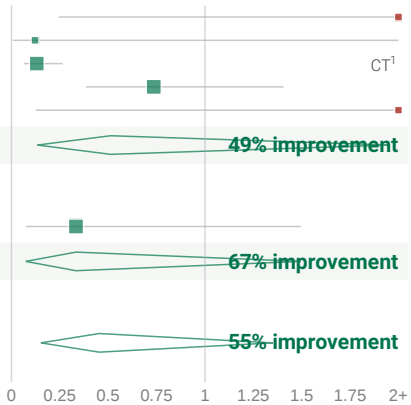
	Improvement, RR [CI]		Treatment	Control
Rocco (RCT)	-404%	5.04 [0.24-104] ICU	2/194	0/198
Cadegiani	88%	0.12 [0.01-2.52] death	0/357	2/137
Elalfy	87%	0.13 [0.06-0.27] viral+	7/62	44/51
Silva (SB RCT)	26%	0.74 [0.38-1.41] viral+	23 (n)	13 (n)
Rossignol (DB RCT)	-206%	3.06 [0.13-74.6] death	1/184	0/195
Early treatment	49%	0.51 [0.13-1.95]	10/820	46/594
$Tau^2 = 1.35; I^2 = 77.4\%$				
	Improvement, RR [CI]		Treatment	Control
Blum (DB RCT)	67%	0.33 [0.07-1.50] death	2/25	6/25
Late treatment	67%	0.33 [0.07-1.50]	2/25	6/25
$Tau^2 = 0.00; I^2 = 0.0\%$				
All studies	55%	0.45 [0.15-1.35]	12/845	52/619



[1] CT: study uses combined treatment

$Tau^2 = 1.03; I^2 = 71.7\%; Z = 1.42$ Effect extraction pre-specified

Database of all nitazoxanide COVID-19 studies. Submit updates/corrections.

Aug 10	News	*Calderón et al., News Report ...*	news	Mantiene Hospital Mónica Pretelini bajo índice de muertes Covid de mujeres e...
	Details	News report on the use of nitazoxanide for pregnant COVID-19 patients in a clinic in Mexico, reporting significant improvements in hospitalization and ...		
Apr 20	Early	***Rossignol** et al., medRxiv, doi...*	death, ↑206.0%, p=0.49	Early treatment with nitazoxanide prevents worsening of mild and moderate C...
	Details	RCT with 184 outpatients treated with an extended release formulation of nitazoxanide, and 195 controls, showing lower hospitalization and progressi...		
Mar 5	Early	***Silva** et al., medRxiv, doi:10.1...*	viral+, ↓26.5%, p=0.36	Efficacy of Nitazoxanide in reducing the viral load in COVID-19 patients. Rando...
	Details	Small RCT with 23 nitazoxanide and 13 control patients showing significantly more patients achieved over 35% reduction in viral load from baseline. N...		
Feb 16	Early	***Elalfy** et al., J. Med. Virol., doi...*	viral+, ↓86.9%, p<0.0001	Effect of a combination of Nitazoxanide, Ribavirin and Ivermectin plus zinc su...
	Details	Non-randomized controlled trial with 62 mild and early moderate patients with home treatment with ivermectin + nitazoxanide + ribavirin + zinc, showi...		
Jan 22	Late	***Blum** et al., EClinicalMedicin...*	death, ↓66.7%, p=0.25	Nitazoxanide superiority to placebo to treat moderate COVID-19 – A Pilot prov...
	Details	RCT with 25 nitazoxanide patients and 25 control patients, showing improved virological and clinical outcomes with treatment. Authors also perform a...		
Nov 4 2020	Early	***Cadegiani** et al., New Microb...*	death, ↓87.8%, p=0.08	Early COVID-19 Therapy with azithromycin plus nitazoxanide, ivermectin or hy...
	Details	Comparison of HCQ, nitazoxanide, and ivermectin showing similar effectiveness for overall clinical outcomes in COVID-19 when used before seven day...		
Oct 23 2020	Early	***Rocco** et al., European Respir...*	ICU, ↑404.1%, p=0.24	Early use of nitazoxanide in mild Covid-19 disease: randomized, placebo-contr...
	Details	RCT 392 patients, median treatment delay 5 days, showing improved viral recovery at 5 days. Symptom recovery was no different at 5 days, and the tre...		

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6 povidone-iodine COVID-19 studies

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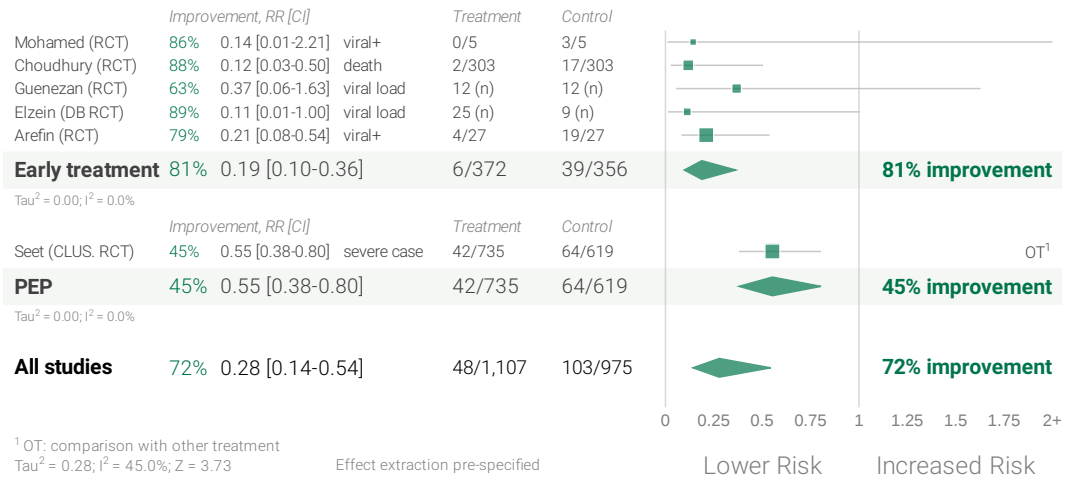

¹ OT: comparison with other treatment
Tau² = 0.28; I² = 45.0%; Z = 3.73

Effect extraction pre-specified

Database of all povidone-iodine COVID-19 studies. Submit updates/corrections.

Search:

May 18	Early	*Arefin* et al., Indian Journal of…	viral+, ↓78.9%, p=0.02	Virucidal effect of povidone iodine on COVID-19 in the nasopharynx: an open-l…
	Details	RCT with 189 patients showing signficantly greater viral clearance with a single application of PVP-I. Authors recommend using PVP-I prophylactically …		
Apr 14	PEP	*Seet* et al., International Jour…	severe case, ↓44.7%, p=0.05	Positive impact of oral hydroxychloroquine and povidone-iodine throat spray f…
	Details	Prophylaxis RCT in Singapore with 3,037 low risk patients, showing lower serious cases, lower symptomatic cases, and lower confirmed cases of COVI…		
Mar 17	Early	*Elzein* et al., Journal of Evide…	viral load, ↓88.8%, p<0.05	In vivo evaluation of the virucidal efficacy of chlorhexidine and povidone-iodin…
	Details	Small RCT comparing mouthwashing with PVP-I, Chlorhexidine, and water, showing significant efficacy for both PVP-I and Chlorhexidine, with PVP-I inc…		
Mar 15	Revie…	*Chopra* et al., Japanese Dent…	review	Can povidone Iodine gargle/mouthrinse inactivate SARS-CoV-2 and decrease t…
	Details	Review discussing the rationale, safety, recommendations, and dosage of PVP-I gargle/mouthwash as an effective method to decrease the viral load of …		
Mar 1	In Vit…	*Xu* et al., Pathogens, doi:10.3…	*in vitro*	Differential Effects of Antiseptic Mouth Rinses on SARS-CoV-2 Infectivity In Vitro
	Details	*In Vitro* study showing that PVP-I and other mouthwashes inactivated replication-competent SARS-CoV-2.		
Mar 1	Early	*Jayaraman* et al., medRxiv, doi:10.1101/2021.02.25.21252488 (Pre…		Povidone iodine, hydrogen peroxide and chlorhexidine mouthwashes reduce S…
	Details	Study of SARS-CoV2 burden in whole mouth fluid and respiratory droplets with povidone iodine, hydrogen peroxide, and chlorhexidine mouthwashes in …		
Feb 4	Early	*Guenezan* et al., JAMA Otola…	viral load, ↓63.2%, p=0.25	Povidone Iodine Mouthwash, Gargle, and Nasal Spray to Reduce Nasopharyng…
	Details	RCT of PCR+ patients with Ct<=20 with 12 treatment and 12 control patients, concluding that nasopharyngeal decolonization may reduce the carriage …		
Feb 1	In Vit…	*Tucker* et al., bioRxiv, doi:10.…	*in vitro*	In vitro inactivation of SARS-CoV-2 with 0.5% povidone iodine nasal spray (Na…
	Details	*In Vitro* study showing that PVP-I eliminated the viability of SARS-CoV-2 with short exposure times. Authors find that PCR alone may not be adequate f…		
Jan 3	Early	*Khan* et al., American Journal of Otolaryngology, doi:10.1016/j.amjo…		Tolerability and usability of 0.5% PVP-I gargles and nasal drops in 6692 patien…
	Details	Study of the use of PVP-I gargles and nasal drops before and after ENT examinations with a total of 6,692 patients, finding high usability and good tole…		
Dec 14 2020	Early	*Seneviratne* et al., Infection, doi:10.1007/s15010-020-01563-9 (Pee…		Efficacy of commercial mouth-rinses on SARS-CoV-2 viral load in saliva: rando…
	Details	Small mouthwash RCT with 4 PVP-I patients and 2 water patients concluding that PVP-I may have a sustained effect on reducing the salivary SARS-Co…		
Dec 3 2020	Early	*Choudhury* et al., Bioresearch…	death, ↓88.2%, p=0.0006	Effect of 1% Povidone Iodine Mouthwash/Gargle, Nasal and Eye Drop in COVID…
	Details	RCT 606 patients in Bangladesh for povidone iodine mouthwash/gargle, nasal drops and eye drops showing significantly lower death, hospitalization, …		
Sep 17 2020	In Vit…	*Frank* et al., JAMA Otolaryng…	*in vitro*	In Vitro Efficacy of a Povidone-Iodine Nasal Antiseptic for Rapid Inactivation of…
	Details	*In Vitro* study showing povidone-iodine nasal antiseptics at concentrations (0.5%, 1.25%, and 2.5%) completely inactivated SARS-CoV-2 within 15 seco…		
Sep 9 2020	Early	*Mohamed* et al., medRxiv, do…	viral+, ↓85.7%, p=0.17	Early viral clearance among COVID-19 patients when gargling with povidone-i…
	Details	Tiny RCT with 5 PVP-I patients, gargling 30 seconds, 3x per day, and 5 control patients (essential oils and tap water were also tested), showing improve…		
Jul 8 2020	In Vit…	*Anderson* et al., Infectious Di…	*in vitro*	Povidone-Iodine Demonstrates Rapid In Vitro Virucidal Activity Against SARS-C…
	Details	*In Vitro* study showing rapid and effective virucidal activity of PVP-I against SARS-CoV-2. All four products tested [antiseptic solution (PVP-I 10%), skin …		
Jul 2 2020	Early	*Martínez Lamas* et al., Oral Diseases, doi:doi.org/10.1111/odi.1352…		Is povidone iodine mouthwash effective against SARS-CoV-2? First in vivo tests
	Details	Small study analyzing the impact of PVP-I mouthwash on the salivary viral load of SARS-CoV-2 in 4 patients with COVID-19. In 2 of the 4 patients (thos…		
Jun 26 2020	In Vit…	*Hassandarvish* et al., British …	*in vitro*	Povidone iodine gargle and mouthwash
	Details	*In Vitro* study showing undiluted PVP-I (1% w/v) achieved >5 log10 reduction in SARS-CoV-2 virus titres at 15, 30 and 60 seconds treatment exposure u…		
Jun 18 2020	Early	*Khan* et al., Am J Otolaryngol, doi:10.1016/j.amjoto.2020.102618 (…		Repurposing 0.5% povidone iodine solution in otorhinolaryngology practice in …
	Details	Study of the use of PVP-I gargles and nasal drops before ENT appointments finding good tolerability.		
Jun 10 2020	Safety	*Frank* et al., Ear, Nose & Thro…	safety analysis	Povidone-Iodine Use in Sinonasal and Oral Cavities: A Review of Safety in the …
	Details	Review of povidone-iodine finding that it can safely be used in the nose at concentrations up to 1.25% and in the mouth at concentrations up to 2.5% fo…		
Jun 8 2020	In Vit…	*Bidra* et al., Journal of Prosth…	*in vitro*	Rapid In-Vitro Inactivation of Severe Acute Respiratory Syndrome Coronavirus …
	Details	*In Vitro* study showing PVP-I rapidly inactivated SARS-CoV-2. Viricidal activity was present at the lowest concentration and contact time tested (0.5% P…		
May 7 2020	PrEP	*Mendoza* et al., SSRN, doi:10.2139/ssrn.3589404 (Preprint)		Prevention of COVID-19 Infection with Povidone-Iodine
	Details	Review of the antiviral efficacy of PVP-I and its potential use as a prophylactic on the oropharyngeal and nasopharyngeal mucosa for COVID-19.		

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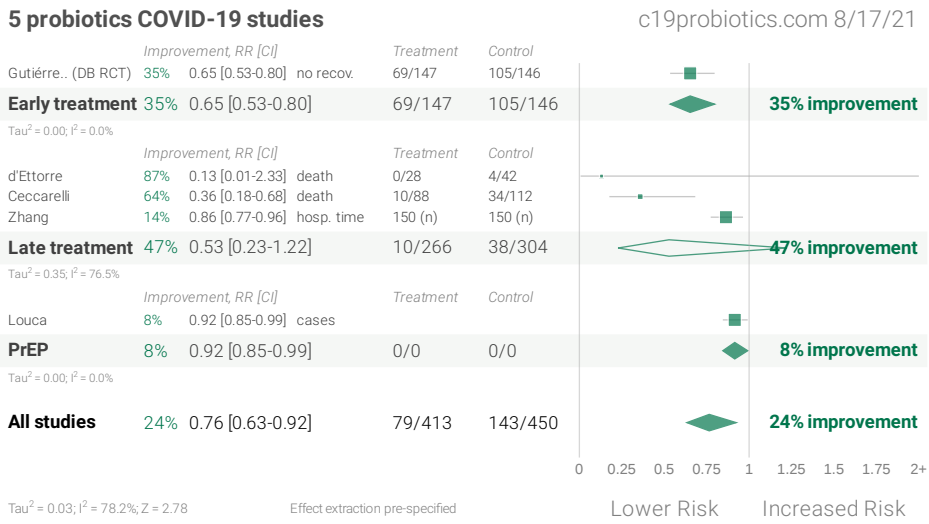

Database of all probiotics COVID-19 studies. Submit updates/corrections.

Aug 4	Late	*Zhang et al., Therapeutic Adv...*	hosp. time, ↓13.6%, p=0.009	Probiotics use is associated with improved clinical outcomes among hospitali...
	Details	Retrospective 375 patients in China, 179 treated with probiotics, showing improved clinical outcomes with treatment.		
Jun 1	Late	*Meskina et al., Therapeutic Archive, doi:10.26442/00403660.2021....*		Efficiency of application of sorbed probiotics in complex therapy of pneumonia...
	Details	RCT 100 pneumonia patients in Russia, showing faster symptom resolution with probiotic treatment (B. bifidum 1).		
May 24	Early	*Gutiérrez-Castrellón et al., m...*	no recov., ↓34.7%, p<0.0001	Efficacy and safety of novel probiotic formulation in adult Covid19 outpatients:...
	Details	RCT 293 outpatients in Mexico, 147 treated with a probiotic composed of three L. plantarum strains (KABP022, KABP023 and KABP033) and one P. aci...		
Jan 11	Late	*Ceccarelli et al., Frontiers in ...*	death, ↓64.2%, p=0.0002	Oral Bacteriotherapy in Patients With COVID-19: A Retrospective Cohort Study
	Details	Retrospective 200 severe condition hospitalized patients in Italy, 88 treated with probiotic Sivomixx, showing lower mortality with treatment.		
Nov 30 2020	PrEP	*Louca et al., BMJ Nutrition, P...*	cases, ↓8.5%, p=0.03	Modest effects of dietary supplements during the COVID-19 pandemic: insight...
	Details	Survey analysis of dietary supplements showing probiotic usage associated with lower incidence of COVID-19. These results are for PCR+ cases only, t...		
Jul 7 2020	Late	*d'Ettorre et al., Frontiers in M...*	death, ↓87.0%, p=0.14	Challenges in the Management of SARS-CoV2 Infection: The Role of Oral Bacte...
	Details	Retrospective 70 hospitalized patients in Italy, 28 treated with probiotic Sivomixx, showing lower risk of respiratory failure and faster recovery with treat...		
May 8 2020	Revie...	*Baud et al., Frontiers in Publi...*	review	Using Probiotics to Flatten the Curve of Coronavirus Disease COVID-2019 Pan...
	Details	Review of data supporting the use of probiotics for COVID-19 and mechanisms of action.		
2015	Meta	*Hao et al., Cochrane Databas...*	meta-analysis	Probiotics for preventing acute upper respiratory tract infections
	Details	Meta analysis of 12 RCTs with 3,720 patients showing probiotics reduced acute upper respiratory tract infections.		

Please send us corrections, updates, or comments. *Vaccines and treatments are both extremely valuable and complementary. All practical, effective, and safe means should be used. Elimination of COVID-19 is a race against viral evolution. No treatment, vaccine, or intervention is 100% available and effective for all current and future variants. Denying the efficacy of any method increases the risk of COVID-19 becoming endemic; and increases mortality, morbidity, and collateral damage. We do not provide medical advice. Before taking any medication, consult a qualified physician who can provide personalized advice and details of risks and benefits based on your medical history and situation. Treatment protocols for physicians are available from the FLCCC.*

Feedback

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4 proxalutamide COVID-19 studies

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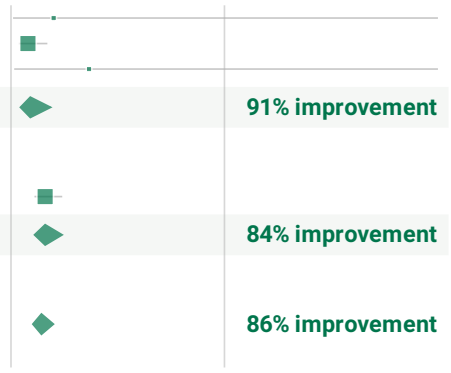
	Improvement, RR [CI]			Treatment	Control
McCoy (DB RCT)	80%	0.20 [0.01-4.13]	death	0/134	2/134
Cadegiani (DB RCT)	92%	0.08 [0.04-0.17]	viral+	7/171	34/66
Cadegiani (DB RCT)	63%	0.37 [0.02-8.85]	death	0/75	1/102
Early treatment	91%	0.09 [0.04-0.19]		7/380	37/302
Tau² = 0.00; I² = 0.0%					
	Improvement, RR [CI]			Treatment	Control
Cadegiani (DB RCT)	84%	0.16 [0.11-0.24]	death	35/317	197/328
Late treatment	84%	0.16 [0.11-0.24]		35/317	197/328
Tau² = 0.00; I² = 0.0%					
All studies	86%	0.14 [0.10-0.20]		42/697	234/630



Tau² = 0.01; I² = 3.6%; Z = 11.45 Effect extraction pre-specified

Lower Risk Increased Risk

Database of all proxalutamide COVID-19 studies. Submit updates/corrections.

Jul 25	Early	*Cadegiani et al., medRxiv, doi:10.1101/2021.07.24.21261047 (Prep...*		Proxalutamide Improves Inflammatory, Immunologic, and Thrombogenic Mark...
	Details	Analysis of data from two proxalutamide early treatment RCTs with 445 patients showing substantial improvements in immunologic, inflammatory, thr...		
Jul 16	News	*Kintor Pharmaceutical News ...*	news	Kintor Pharmaceutical Receives Emergency Use Authorization for Proxalutami...
	Details	News release announcing that proxalutamide has been granted an emergency use authorization for COVID-19 in Paraguay.		
Jul 10	Early	*Cadegiani et al., medRxiv, do...*	death, ↓63.4%, p=1.00	Proxalutamide (GT0918) Reduces the Rate of Hospitalization in mild-to-moder...
	Details	RCT 177 women in Brazil, 75 treated with proxalutamide, showing significantly lower hospitalization with treatment.		
Jul 2	Late	*Zimerman et al., medRxiv, doi:10.1101/2021.06.28.21259661 (Prep...*		Proxalutamide (GT0918) Reduction of Mortality Rate in Hospitalized COVID-19...
	Details	Analysis of treatment duration in the Proxa-Rescue AndroCoV trial showing significantly higher mortality among patients that interrupted treatment wit...		
Jul 1	Late	*Medeiros et al., ResearchGate (Preprint)*		Proxalutamide (GT0918) Improves Lung Injury in Hospitalized COVID-19 Patie...
	Details	Analysis of radiological findings from the Proxa-Rescue AndroCoV trial showing that proxalutamide significantly improves lung opacities compared to ...		
Mar 10	Late	*Cadegiani et al., medRxiv, do...*	death, ↓84.0%, p<0.0001	Efficacy of Proxalutamide in Hospitalized COVID-19 Patients: A Randomized, D...
	Details	RCT 645 hospitalized patients, 317 treated with proxalutamide, showing significantly lower mortality and faster recovery with treatment. NCT04728802.		
Feb 22	Early	*Cadegiani et al., Cureus, doi:...*	viral+, ↓92.1%, p<0.0001	Proxalutamide Significantly Accelerates Viral Clearance and Reduces Time to ...
	Details	RCT 234 mild-moderate COVID-19 patients with 171 treated with proxalutamide, showing significantly faster viral clearance and recovery.		
Dec 30 2020	Early	*McCoy et al., Frontiers in Me...*	death, ↓80.0%, p=0.50	Proxalutamide (GT0918) Reduces the Rate of Hospitalization for COVID-19 Ma...
	Details	RCT 268 male patients in Brazil, 134 treated with proxalutamide, showing significantly lower hospitalization and mechanical ventilation. NCT04446429.		

Please send us corrections, updates, or comments. *Vaccines and treatments are both extremely valuable and complementary. All practical, effective, and safe means should be used. Elimination of COVID-19 is a race against viral evolution. No treatment, vaccine, or intervention is 100% available and effective for all current and future variants. Denying the efficacy of any method increases the risk of COVID-19 becoming endemic; and increases mortality, morbidity, and collateral damage. We do not provide medical advice. Before taking any medication, consult a qualified physician who can provide personalized advice and details of risks and benefits based on your medical history and situation. Treatment protocols for physicians are available from the FLCCC.*

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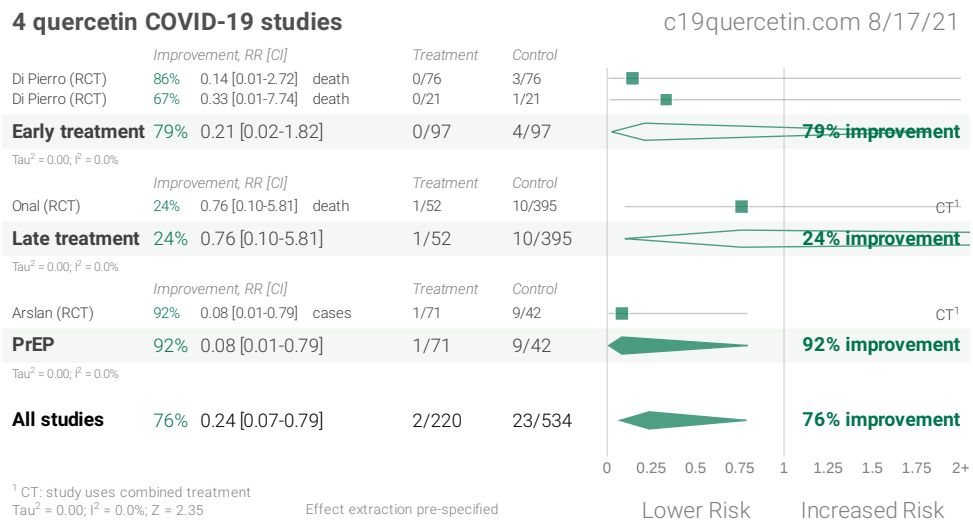

Database of all quercetin COVID-19 studies. Submit updates/corrections.

Jul 6	PrEP	*Margolin et al., Journal of Evi...*	cases, ↓94.4%, p=0.003	20-Week Study of Clinical Outcomes of Over-the-Counter COVID-19 Prophylaxi...
	Details	Retrospective 113 outpatients, 53 (patient choice) treated with zinc, quercetin, vitamin C/D/E, l-lysine, and Quina, showing lower cases with treatment.		
Jun 24	Early	*Di Pierro et al., International J...*	death, ↓66.7%, p=1.00	Potential Clinical Benefits of Quercetin in the Early Stage of COVID-19: Results ...
	Details	RCT 42 outpatients in Pakistan, 21 treated with quercetin phytosome, showing faster viral clearance and lower symptom severity with treatment.		
Jun 8	Early	*Di Pierro et al., International J...*	death, ↓85.7%, p=0.25	Possible Therapeutic Effects of Adjuvant Quercetin Supplementation Against E...
	Details	RCT 152 outpatients in Pakistan, 76 treated with quercetin phytosome, showing lower mortality, ICU admission, and hospitalization with treatment.		
Apr 8	Early	*Aguilar et al., Journal of Advances in Medical and Pharmaceutical S...*		Oral Quercetin in Adult Patients as a Potential Nutraceutical against Coronavir...
	Details	Prospective study of 52 patients treated with quercetin. There was no control group.		
Jan 19	Late	*Onal et al., Authorea, doi:10.2...*	death, ↓24.0%, p=1.00	Treatment of COVID-19 Patients with Quercetin: A Prospective, Single - Centre, ...
	Details	RCT 447 moderate-to-severe hospitalized patients in Turkey, 52 treated with quercetin, bromelain, and vitamin C, showing no statistically significant dif...		
Nov 16 2020	PrEP	*Arslan et al., SSRN, doi:10.21...*	cases, ↓91.7%, p=0.03	Synergistic Effect of Quercetin and Vitamin C Against COVID-19: Is a Possible ...
	Details	Small prophylaxis RCT with 113 patients showing fewer cases with quercetin+vitamin C prophylaxis. NCT04377789.		
Oct 9 2020	Revie...	*Derosa et al., Phytotherapy R...*	review	A role for quercetin in coronavirus disease 2019 (COVID-19)
	Details	Review noting that quercetin has a theoretical, but significant, capability to interfere with SARS-CoV-2 replication, with results showing this to be the fift...		
Jun 19 2020	Revie...	*Biancatelli et al., Frontiers in ...*	review	Quercetin and Vitamin C: An Experimental, Synergistic Therapy for the Preventi...
	Details	Review of the evidence for the use of vitamin C and quercetin both for prophylaxis in high-risk populations and for the treatment of COVID-19 patients.		

Please send us corrections, updates, or comments. *Vaccines and treatments are both extremely valuable and complementary. All practical, effective, and safe means should be used. Elimination of COVID-19 is a race against viral evolution. No treatment, vaccine, or intervention is 100% available and effective for all current and future variants. Denying the efficacy of any method increases the risk of COVID-19 becoming endemic; and increases mortality, morbidity, and collateral damage. We do not provide medical advice. Before taking any medication, consult a qualified physician who can provide personalized advice and details of risks and benefits based on your medical history and situation. Treatment protocols for physicians are available from the FLCCC.*

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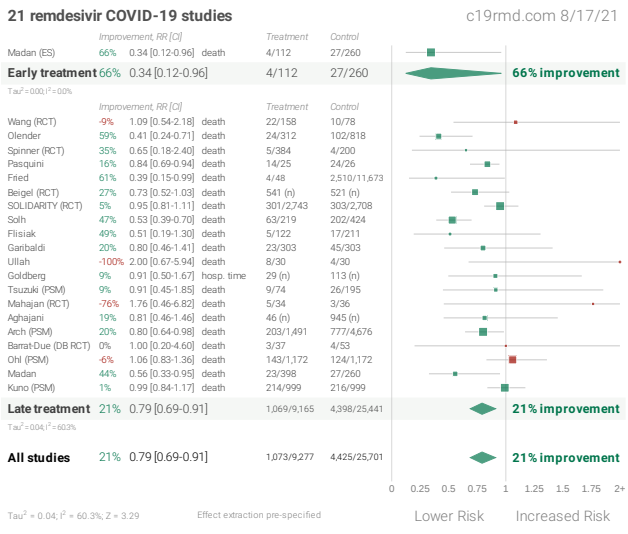

Database of all remdesivir COVID-19 studies. Submit updates/corrections.

Search:

Aug 13
Late *Hosseini et al., medRxiv, doi:10.1101/2021.08.13.21261992 (Prepri…* Another step toward final call on Remdesivir efficacy as a treatment for hospit…
Details Single arm remdesivir trial with 145 hospitalized patients showing no statistically significant difference between "early" and "late" administration, howe…

Aug 9
Late *Kuno et al., Journal of Antimi…* death, ↓0.9%, p=0.96 The association of remdesivir and in-hospital outcomes for COVID-19 patients …
Details PSM retrospective 3,372 hospitalized patients in the USA treated with steroids, showing no significant difference in mortality with remdesivir, but a lowe…

Aug 5
Meta *Anseems et al., Cochrane Dat…* meta-analysis Remdesivir for the treatment of COVID-19
Details Review of 5 RCTs prior to April 17, 2021 showing mortality RR 0.93 [0.81-1.06] for hospitalized patients.

Jul 19
Late *Madan et al., medRxiv, doi:1…* death, ↓44.4%, p=0.03 Remdesivir for the treatment of COVID-19 disease: A retrospective comparative…
Details Retrospective 1,262 hospitalized patients, 398 treated with remdesivir, showing unadjusted lower mortality with treatment, and a treatment delay-respo…

Jul 15
Late *Ohl et al., JAMA Network Op…* death, ↑6.0%, p=0.66 Association of Remdesivir Treatment With Survival and Length of Hospital Sta…
Details Retrospective 5,898 hospitalized patients in the USA, 2,374 receiving remdesivir treatment, showing no significant difference in mortality, and a longer ti…

Jul 13
Late *Barrat-Due et al., Annals of In…* death, 0.0%, p=1.00 Evaluation of the Effects of Remdesivir and Hydroxychloroquine on Viral Clear…
Details Small RCT in Norway with 52 HCQ and 42 remdesivir patients, showing no significant differences with treatment. Add-on trial to WHO Solidarity. NCT04…

Jun 21
Late *Arch et al., medRxiv, doi:10.1…* death, ↓19.9%, p=0.03 Evaluation of the effectiveness of remdesivir in treating severe COVID-19 using…
Details Prospective PSM analysis of remdesivir use in the UK showing statistically significantly lower mortality at 28 days. For unspecified reasons, the study p…

May 4
Meta *Liao et al., Journal of the For…* meta-analysis Assessing Efficacy of Antiviral Therapy for COVID-19 Patients: A Case Study on…
Details Bayesian synthesis design and multistate analysis of remdesivir results showing 31% [18-44%] lower risk of death and 10% [1-18%] higher recovery.

Apr 29
Late *Aghajani et al., Journal of M…* death, ↓18.6%, p=0.49 Decreased In-Hospital Mortality Associated with Aspirin Administration in Hos…
Details Retrospective 991 hospitalized patients in Iran focusing on aspirin use but also showing results for HCQ, remdesivir, and favipiravir.

Mar 20
Late *Mahajan et al., Indian Journa…* death, ↑76.5%, p=0.47 Clinical outcomes of using remdesivir in patients with moderate to severe COV…
Details Small RCT with 34 remdesivir patients and 36 controls finding no significant difference in clinical outcomes.

Mar 10
Late *Tsuzuki et al., medRxiv, doi:1…* death, ↓8.8%, p=1.00 Efficacy of remdesivir in Japanese patients hospitalised with COVID-19: A larg…
Details Retrospective database analysis of 1907 hospitalized patients in Japan, using PSM to compare 74 remdesivir patients and 195 control patients, not sh…

Mar 9
Late *Goldberg et al., Clinical Micro…* hosp. time, ↓9.2%, p=0.77 A real-life setting evaluation of the effect of remdesivir on viral load in COVID-1…
Details Retrospective 29 remdesivir patients and 113 controls, not finding a significant difference in nasopharyngeal viral load or hospitalization time. Hospital…

Mar 8
Late *Fateh et al., medRxiv, doi:10.1101/2021.03.05.21251351 (Preprint)* A single-center retrospective cohort study of Covid-19 medications: Remdesivir…
Details Retrospective 324 hospitalized patients in Iran reporting on the use Remdesivir, Favipiravir, Methylprednisolone, Dexamethasone, and Interferon β1a an…

Feb 27
Safety *Touafchia et al., Clinical Micr…* safety analysis Serious bradycardia and remdesivir for coronavirus 2019 (COVID-19): a new sa…
Details Comparison of bradycardia in COVID-19 patients treated with remdesivir compared to those treated with HCQ, lopinavir/ritonavir, tocilizumab or glucoc…

Dec 28 2020
N/A *Shen et al., Fundamentals of …* safety analysis Remdesivir potently inhibits carboxylesterase-2 through covalent modification…
Details Analysis finding that remdesivir at nanomolar concentrations inhibits carboxylesterase-2 (CES2) through covalent modifications. CES2 is a major drug-…

Dec 24 2020
In Vit… *Jeffreys et al., bioRxiv, doi:10…* *in vitro* Remdesivir-Ivermectin combination displays synergistic interaction with impro…
Details *In Vitro* study showing enhanced antiviral activity of ivermectin and remdesivir in combination.

Nov 29 2020
Late *Ullah et al., International Jour…* death, ↑100%, p=0.33 Efficacy of Remdesivir in Covid-19 Patients; Multicenter Study in Lahore
Details Small late stage (hospitalized, <12 days symptoms) remdesivir study showing non-statistically significant higher mortality with treatment. No adjustme…

Nov 20 2020
Late *Garibaldi et al., medRxiv, doi:…* death, ↓20.0%, p=0.44 Effectiveness of remdesivir with and without dexamethasone in hospitalized p…
Details Retrospective 303 remdesivir patients and 303 matched controls showing significantly faster clinical improvement, and lower (but not statistically signi…

Nov 3 2020
Late *Flisiak et al., medRxiv, doi:10…* death, ↓48.9%, p=0.18 Remdesivir-based therapy improved recovery of patients with COVID-19 in the …
Details Retrospective study comparing 122 remdesivir patients and 211 lopinavir/ritonavir patients, showing higher rates of clinical improvement with remdesi…

Oct 20 2020
Late *Solh et al., medRxiv, doi:10.1…* death, ↓47.0%, p<0.001 Clinical course and outcome of COVID-19 acute respiratory distress syndrome: …
Details Retrospective database analysis of 7,816 Veterans Affairs hospitalized patients showing 47% reduction in progression from ARDS to mortality.

Oct 15 2020
Late *SOLIDARITY Trial Consortium…* death, ↓5.0%, p=0.53 Repurposed antiviral drugs for COVID-19; interim WHO SOLIDARITY trial results
Details WHO SOLIDARITY open-label RCT with 2,750 very late stage (76% on oxygen/ventilation) Remdesivir patients, mortality relative risk RR 0.95 [0.81-1.11],…

Oct 8 2020
Late *Beigel et al., NEJM, doi:10.10…* death, ↓27.0%, p=0.07 Remdesivir for the Treatment of Covid-19 — Final Report
Details RCT 1,062 hospitalized patients showing faster recovery time with treatment, median 10 days vs. 15 days for placebo, rate ratio for recovery 1.29, *p*<0.0…

Aug 28 2020
Late *Fried et al., Clinical Infectious…* death, ↓61.2%, p=0.02 Patient Characteristics and Outcomes of 11,721 Patients with COVID19 Hospit…
Details Database analysis of 11,721 hospitalized patients, 48 treated with remdesivir. Data inconsistencies have been found in this study, for example 99.4% of…

Aug 23 2020
Late *Pasquini et al., Journal of An…* death, ↓16.2%, p<0.0001 Effectiveness of remdesivir in patients with COVID-19 under mechanical ventil…
Details Retrospective 51 ICU patients under mechanical ventilation, 25 treated with remdesivir, showing lower mortality with treatment.

Aug 21 2020
Late *Spinner et al., JAMA, doi:10.1…* death, ↓34.9%, p=0.50 Effect of Remdesivir vs Standard Care on Clinical Status at 11 Days in Patients…
Details Late stage (median 8 days from symptom onset) RCT 584 patients with moderate COVID-19 showing (non-statistically significant) lower mortality. 5-d…

Jul 24 2020
Late *Olender et al., Clinical Infecti…* death, ↓58.8%, p=0.001 Remdesivir for Severe Coronavirus Disease 2019 (COVID-19) Versus a Cohort R…
Details Comparative analysis between remdesivir trial GS-US-540–5773 and a retrospective SOC cohort with similar inclusion criteria, showing lower mortality …

Jun 30 2020
Late *Dubert et al., International Journal of Infectious Diseases, doi:10.10…* Case report study of the first five COVID-19 patients treated with remdesivir in …
Details Early report on 5 ICU patients treated with remdesivir highlighting issues with usage in critically ill patients.

Jun 29 2020
Late *Zhu et al., medRxiv, doi:10.11…* death, ↓36.0%, p=0.02 Efficacy and Safety of Remdesivir for COVID-19 Treatment: An Analysis of Ran…
Details Meta analysis of Beigel and Wang RCTs showing remdesivir significantly decreased mortality (8.18% vs. 12.70%, RR 0.64 [0.44-0.92], *p* = 0.175).

May 27 2020
Late *Goldman et al., NEJM, doi:10.1056/NEJMoa2015301 (Peer Review…* Remdesivir for 5 or 10 Days in Patients with Severe Covid-19
Details RCT of remdesivir for 5 or 10 days with no placebo control group, showing no significant differences between 5 and 10 day treatment. NCT04292899

Apr 29 2020
Late *Wang et al., Lancet, doi:10.10…* death, ↑8.6%, p=1.00 Remdesivir in adults with severe COVID-19: a randomised, double-blind, placeb…
Details Small RCT with 237 hospitalized patients in China with severe COVID-19, not showing statistically significant benefits. 158 treatment patients and 79 c…

Apr 10 2020
Late *Grein et al., NEJM, doi:10.1056/NEJMoa2007016 (Peer Reviewed)* Compassionate Use of Remdesivir for Patients with Severe Covid-19
Details Report on compassionate use of remdesivir with 61 severe COVID-19 patients, showing clinical improvement in 36 of 53 patients.

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1 sotrovimab COVID-19 study

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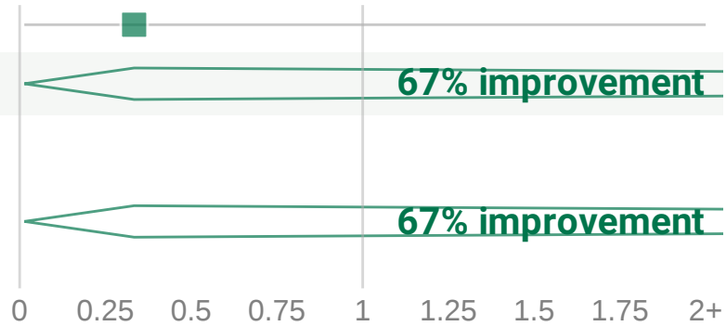
	Improvement, RR [CI]			Treatment	Control
GlaxoSmi.. (DB RCT)	67%	0.33 [0.01-8.16]	death	0/291	1/292
Early treatment	67%	0.33 [0.01-8.16]		0/291	1/292
Tau^2 = 0.00; I^2 = 0.0%					
All studies	67%	0.33 [0.01-8.16]		0/291	1/292



Tau^2 = 0.00; I^2 = 0.0%; Z = 0.67

Effect extraction pre-specified

Database of all sotrovimab COVID-19 studies. Submit updates/corrections.

May 26

Early ***GlaxoSmithKline*** *(Preprint)* death, ↓66.6%, p=1.00 Sotrovimab Clinical, Safety, & Variant Information

Details Interim results from the COMET-ICE trial showing lower mortality and progression with treatment. NCT04545060.

Please send us corrections, updates, or comments. *Vaccines and treatments are both extremely valuable and complementary. All practical, effective, and safe means should be used. Elimination of COVID-19 is a race against viral evolution. No treatment, vaccine, or intervention is 100% available and effective for all current and future variants. Denying the efficacy of any method increases the risk of COVID-19 becoming endemic; and increases mortality, morbidity, and collateral damage. We do not provide medical advice. Before taking any medication, consult a qualified physician who can provide personalized advice and details of risks and benefits based on your medical history and situation. Treatment protocols for physicians are available from the FLCCC.*

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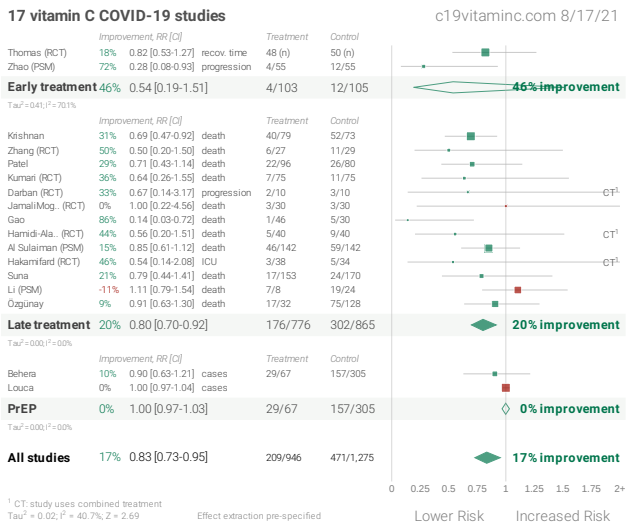

Database of all vitamin C COVID-19 studies. Submit updates/corrections.

Search: Restrict: **All** Early Late PrEP Levels

Jul 6	PrEP	*Margolin et al., Journal of Evi…*	cases, ↓94.4%, p=0.003	20-Week Study of Clinical Outcomes of Over-the-Counter COVID-19 Prophylaxi…
	Details	Retrospective 113 outpatients, 53 (patient choice) treated with zinc, quercetin, vitamin C/D/E, l-lysine, and Quina, showing lower cases with treatment.		
Jul 4	Late	*Özgünay et al., The European…*	death, ↓9.3%, p=0.69	The use of vitamin C in the intensive care unit during the COVID-19 pandemic
	Details	Retrospective 160 ICU patients, 32 with raised neutrophil/lymphocyte ratio treated with vitamin C, showing no significant differences.		
Jun 8	Late	*Li et al., Journal of Pharmacy…*	death, ↑10.5%, p=1.00	Use of Intravenous Vitamin C in Critically Ill Patients With COVID-19 Infection
	Details	PSM retrospective 8 ICU patients treated with vitamin C and 24 matched controls, showing no significant difference. Authors note that "it is possible for…		
May 11	Late	*Suna et al., Med. Clin. (Barc.),…*	death, ↓21.3%, p=0.52	Effect of high-dose intravenous vitamin C on prognosis in patients with SARS-…
	Details	Retrospective 323 hospitalized patients, 153 treated with vitamin C, showing no significant differences. Patients in each group were in different time per…		
May 3	In Sili…	*Malla et al., bioRxiv, doi:10.1101/2021.05.02.442358 (Preprint)*		Vitamin C inhibits SARS coronavirus-2 main protease essential for viral replica…
	Details	*In Vitro* study showing that vitamin C inhibits SARS-CoV-2 3CLpro. Authors note that the different clinical results may be explained in part by the widely …		
Apr 22	Early	*Zhao et al., Frontiers in Phar…*	progression, ↓72.0%, p=0.03	High Dose Intravenous Vitamin C for Preventing The Disease Aggravation of M…
	Details	PSM retrospective 110 patients, 55 treated with high-dose IV vitamin C, showing lower progression to severe disease with treatment. Patients in each gr…		
Apr 14	Late	*Hakamifard et al., Immunopa…*	ICU, ↓46.3%, p=0.46	The effect of vitamin E and vitamin C in patients with COVID-19 pneumonia; a …
	Details	RCT with 38 patients treated with vitamin C and vitamin E, and 34 control patients, showing lower ICU admission with treatment, but not statistically si…		
Apr 2	Late	*Al Sulaiman et al., Research …*	death, ↓14.9%, p=0.27	Ascorbic Acid as an Adjunctive Therapy in Critically Ill Patients with COVID-19: …
	Details	Retrospective 158 critically ill patients receiving vitamin C and propensity matched controls, showing mortality OR 0.77 [0.48-1.23], and statistically sig…		
Mar 8	Late	*Hamidi-Alamdari et al., Clinic…*	death, ↓44.4%, p=0.38	Methylene blue for treatment of hospitalized COVID-19 patients: a randomized,…
	Details	RCT 80 hospitalized patients with severe COVID-19, 40 treated with methylene blue + vitamin C + N-acetyl cysteine, showing lower mortality, shorter ho…		
Mar 2	Early	*Hemilä et al., Research Squar…*	meta-analysis	Vitamin C may increase the recovery rate of outpatient cases of SARS-CoV-2 in…
	Details	Reanalysis of Thomas et al. showing that vitamin C increased the recovery rate by 70%, p = 0.025.		
Feb 26	Late	*Gao et al., Aging, doi:10.186…*	death, ↓86.0%, p=0.04	The efficiency and safety of high-dose vitamin C in patients with COVID-19: a r…
	Details	Retrospective 76 COVID-19 patients, 46 treated with intravenous high-dose vitamin C, showing lower mortality and improved oxygen requirements with …		
Feb 12	Early	*Thomas et al., JAMA Networ…*	recov. time, ↓17.9%, p=0.38	Effect of High-Dose Zinc and Ascorbic Acid Supplementation vs Usual Care on …
	Details	Small 214 low-risk outpatient RCT showing non-statistically significant faster recovery with zinc and with vitamin C. NCT04342728. A secondary analy…		
Feb 1	Late	*Zhao et al., Ann. Palliat. Med., doi:10.21037/apm-20-1387 (Peer Re…*		Beneficial aspects of high dose intravenous vitamin C on patients with COVID-…
	Details	Retrospective case study of 12 severe/critical COVID-19 patients finding that high dose IV vitamin C improved inflammatory response, immune and org…		
Jan 27	Late	*Xing et al., Journal of Pharmaceutical and Biomedical Analysis, doi:…*		Vitamin C supplementation is necessary for patients with coronavirus disease:…
	Details	Prospective study with 31 COVID-19 patients and 60 controls reporting on a new method to assess plasma vitamin C concentrations. Vitamin C was de…		
Jan 9	Late	*JamaliMoghadamSiahkali e…*	death, 0.0%, p=1.00	Safety and Effectiveness of High-Dose Vitamin C in Patients with COVID-19; A …
	Details	Small late stage RCT for the addition of vitamin C to HCQ and lopinavir/ritonavir, with 30 treatment and 30 control patients, finding a significant reducti…		
Dec 15 2020	Late	*Darban et al., Journal of Cell…*	progression, ↓33.3%, p=1.00	Efficacy of High Dose Vitamin C, Melatonin and Zinc in Iranian Patients with A…
	Details	Small RCT in Iran with 20 ICU patients, 10 treated with high-dose vitamin C, melatonin, and zinc, not showing significant differences. IRCT2015122802…		
Dec 7 2020	Revie…	*Holford et al., Nutrients, doi:1…*	review	Vitamin C—An Adjunctive Therapy for Respiratory Infection, Sepsis and COVID-…
	Details	Review of vitamin C use for respiratory infections including COVID-19 and the mechanisms of action. Authors note that evidence to date indicates oral …		
Nov 30 2020	Late	*Kumari et al., Cureus 12(11): …*	death, ↓36.4%, p=0.45	The Role of Vitamin C as Adjuvant Therapy in COVID-19
	Details	RCT 150 hospitalized patients in Pakistan showing 26% faster recovery, p < 0.0001. 36% lower mortality, not statistically significant due to the small nu…		
Nov 30 2020	PrEP	*Louca et al., BMJ Nutrition, P…*	cases, 0.0%, p=1.00	Modest effects of dietary supplements during the COVID-19 pandemic: insight…
	Details	Survey analysis of dietary supplements showing no significant difference in PCR+ cases with vitamin C usage in the UK, however significant reductions…		
Nov 3 2020	PrEP	*Behera et al., PLoS ONE, doi:…*	cases, ↓9.6%, p=0.58	Role of ivermectin in the prevention of SARS-CoV-2 infection among healthcare…
	Details	Retrospective matched case-control prophylaxis study for HCQ, ivermectin, and vitamin C with 372 healthcare workers, showing lower COVID-19 incide…		
Oct 1 2020	Late	*Patel et al., Chest Infections, …*	death, ↓29.5%, p=0.18	The significance of oral ascorbic acid in patients with COVID-19
	Details	Retrospective 176 hospitalized patients, 96 treated with oral vitamin C (from 500mg to 1500mg daily), showing lower mortality with treatment.		
Sep 8 2020	Levels	*Arvinte et al., Med. Drug Discov, doi:10.1016/j.medidd.2020.100064…*		Serum Levels of Vitamin C and Vitamin D in a Cohort of Critically Ill COVID-19 …
	Details	Pilot study with 21 ICU patients finding low serum levels of vitamin C and vitamin D in most patients. Older age and low vitamin C level appeared to be …		
Aug 26 2020	Levels	*Chiscano-Camón et al., Critical Care, doi:10.1186/s13054-020-0324…*		Vitamin C levels in patients with SARS-CoV-2-associated acute respiratory dist…
	Details	Small study of 18 COVID-19 ARDS patients showing that vitamin C levels were very low - 17 patients had undetectable levels and one had a low level (2…		
Aug 10 2020	Late	*Zhang et al., Annals of Intens…*	death, ↓50.0%, p=0.20	Pilot Trial of High-dose vitamin C in critically ill COVID-19 patients (preprint 8/1…
	Details	Small RCT for high dose vitamin C for ICU patients showing reduced (but not statistically significant) mortality. Dosage was 12g of vitamin C/50ml ever…		
Aug 1 2020	Late	*Hiedra et al., Expert Review of Anti-infective Therapy, doi:10.1080/1…*		The use of IV vitamin C for patients with COVID-19: a case series
	Details	Case study of 17 patients receiving IV vitamin C for COVID-19, finding a significant decrease in inflammatory markers, including ferritin and D-dimer, an…		
Jul 25 2020	Revie…	*Feyaerts et al., Nutrition, doi:…*	review	Vitamin C as prophylaxis and adjunctive medical treatment for COVID-19?
	Details	Review concluding that there is clear evidence that vitamin C in high doses can reduce interleukin-6 and endothelin-1 mediators. Authors suggest a rela…		
Jul 20 2020	Late	*Krishnan et al., J Clin Anesth…*	death, ↓30.7%, p<0.0001	Clinical comorbidities, characteristics, and outcomes of mechanically ventilate…
	Details	Retrospective 152 mechanically ventilated patients in the USA showing unadjusted lower mortality with vitamin C, vitamin D, HCQ, and zinc treatment, …		
Jun 19 2020	Revie…	*Biancatelli et al., Frontiers in …*	review	Quercetin and Vitamin C: An Experimental, Synergistic Therapy for the Preventi…
	Details	Review of the evidence for the use of vitamin C and quercetin both for prophylaxis in high-risk populations and for the treatment of COVID-19 patients.		
May 27 2020	In Sili…	*Kumar et al., VirusDisease, doi:10.1007/s13337-020-00643-6 (prepr…*		In silico virtual screening-based study of nutraceuticals predicts the therapeuti…
	Details	*In Silico* analysis finding that magnesium ascorbate, a form of Vitamin C, was found to be the top compound among 106 nutraceuticals for binding to …		

Please send us corrections, updates, or comments. *Vaccines and treatments are both extremely valuable and complementary. All practical, effective, and safe means should be used. Elimination of COVID-19 is a race against viral evolution. No treatment, vaccine, or intervention is 100% available and effective for all current and future variants. Denying the efficacy of any method increases the risk of COVID-19 becoming endemic; and increases mortality, morbidity, and collateral damage. We do not provide medical advice. Before taking any medication, consult a qualified physician who can provide personalized advice and details of risks and benefits based on your medical history and situation. Treatment protocols for physicians are available from the FLCCC.*

Feedback

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VITAMIN D FOR COVID-19

100 STUDIES BY 865 SCIENTISTS

67 SUFFICIENCY STUDIES WITH 34,863 PATIENTS

33 TREATMENT TRIALS WITH 46,860 PATIENTS

42% IMPROVEMENT IN 33 TREATMENT TRIALS RR 0.58 [0.50-0.67]

56% IMPROVEMENT IN 67 SUFFICIENCY STUDIES RR 0.44 [0.37-0.52]

55% IMPROVEMENT IN 19 TREATMENT MORTALITY RESULTS RR 0.45 [0.32-0.64]

SUFFICIENCY STUDIES ANALYZE OUTCOMES BASED ON SERUM LEVELS. 08/17/21. VDMETA.COM

Database of all vitamin D COVID-19 studies. Sufficiency studies analyze outcomes based on vitamin D levels, confounding factors may be significant. Treatment studies directly analyze the effect of vitamin D treatment. vitamind4all.org provides treatment recommendations. Submit updates/corrections.

Search: Restrict: All Treatment Levels

Aug 15 | Early,… | *Covid Analysis* (Preprint) (me… | meta-analysis v82 | Vitamin D for COVID-19: real-time meta analysis of 100 studies
Details • 91% of 33 vitamin D treatment studies report positive effects (17 statistically significant in isolation). • Random effects meta-analysis with pooled effe…

Aug 12 | Levels | *di Filippo* et al, The Journal o… | death, ↓10.7%, p=1.00 | Vitamin D levels associate with blood glucose and BMI in COVID-19 patients p…
Details Retrospective 88 patients in Italy, showing vitamin D deficiency associated with severe cases, blood glucose, and BMI.

Aug 10 | Levels | *Alpcan* et al., Epidemiology &… | cases, ↓44.6%, p=0.0004 | Vitamin D levels in children with COVID-19: a report from Turkey
Details Retrospective 75 COVID-19 hospitalized pediatric patients in Turkey and 80 healthy controls, showing significantly lower vitamin D levels in COVID-19 p…

Aug 5 | Levels | *Nimavat* et al., Annals of Me… | death, ↓50.4%, p=0.17 | Vitamin D deficiency and COVID-19: A case-control study at a tertiary care hos…
Details Case control study with 156 PCR+ cases in India and 204 controls, showing more frequent vitamin D deficiency in COVID-19 patients, and an associatio…

Jul 30 | Levels | *Matin* et al., Archives of Micr… | cases, ↓66.1%, p<0.0001 | The sufficient vitamin D and albumin level have a protective effect on COVID-1…
Details Case control study with 191 COVID-19 patients and 203 healthy controls in Iran, showing an association between vitamin D deficiency and COVID-19 in…

Jul 29 | Meta | *Ghasemian* et al., The Interna… | meta-analysis | The Role of Vitamin D in the Age of COVID-19: A Systematic Review and Meta-…
Details Systematic review and meta analysis of 23 studies, finding significantly higher risk of COVID-19 cases and severity with vitamin D deficiency. Mortality …

Jul 29 | Early,… | *Annweiler* et al., The Journal … | death, ↓64.2%, p=0.002 | Vitamin D supplementation prior to or during COVID-19 associated with better …
Details Report on extended results from the GERIA-COVID study, showing significantly lower mortality at 3 months with vitamin D treatment. Results combine p…

Jul 27 | Levels | *Cozier* et al., PLoS ONE, doi:1… | cases, ↓38.6%, p=0.02 | Lower serum 25(OH)D levels associated with higher risk of COVID-19 infection …
Details Prospective study of vitamin D levels and COVID-19 infection in the Black Women's Health Study, showing higher risk of infection for lower vitamin D lev…

Jul 27 | PrEP | *Israel* et al., Epidemiology an… | hosp., ↓9.1%, p=0.003 | Identification of drugs associated with reduced severity of COVID-19: A case-c…
Details Case control study examining medication usage with a healthcare database in Israel, showing lower risk of hospitalization with vitamin D (defined as b…

Jul 23 | Late | *Güven* et al, European Journ… | death, ↓24.8%, p=0.32 | The effect of high-dose parenteral vitamin D3 on COVID-19-related inhospital …
Details Retrospective 175 ICU patients, 113 treated with a single dose of 300,000IU intramuscular cholecalciferol, showing lower mortality with treatment, but n…

Jul 17 | PrEP | *Oristrell* et al., Journal of End… | death, ↑1.0%, p=0.91 | Vitamin D supplementation and COVID-19 risk: a population-based, cohort stu…
Details Retrospective study of cholecalciferol and calcitriol supplementation in Catalonia showing a small but significant lower risk of cases with cholecalcifer…

Jul 6 | PrEP | *Margolin* et al., Journal of Evi… | cases, ↓94.4%, p=0.003 | 20-Week Study of Clinical Outcomes of Over-the-Counter COVID-19 Prophylaxi…
Details Retrospective 113 outpatients, 53 (patient choice) treated with zinc, quercetin, vitamin C/D/E, l-lysine, and Quina, showing lower cases with treatment.

Jun 24 | Late | *Sabico* et al., Nutrients, doi:10.3390/nu13072170 (Peer Reviewed) | Effects of a 2-Week 5000 IU versus 1000 IU Vitamin D3 Supplementation on R…
Details Small RCT of 69 hospitalized patients comparing 1000IU and 5000IU daily cholecalciferol, showing faster recovery with the higher dose.

Jun 24 | Meta | *Pal* et al., Journal of Endocri… | meta-analysis | Vitamin D supplementation and clinical outcomes in COVID-19: a systematic r…
Details Meta analysis of 13 vitamin D treatment studies, showing significantly lower ICU admission/mortality with treatment.

Jun 17 | Levels | *Jude* et al., Journal of Clinica… | hosp., ↓71.6%, p<0.0001 | Vitamin D deficiency is associated with higher hospitalisation risk from COVID-…
Details Retrospective 80,670 people in the UK with vitamin D levels measured within the last 12 months, showing higher risk of hospitalization with low vitami…

Jun 14 | Levels | *Campi* et al., BMC Infectious … | death, ↓24.3%, p=0.53 | Vitamin D and COVID-19 severity and related mortality: a prospective study in I…
Details Prospective study of 103 hospitalized patients in Italy, showing very high prevalence of vitamin D deficiency, and increased severity for lower vitamin D l…

Jun 7 | Levels | *Dror* et al., medRxiv, doi:10.1… | severe case, ↓85.1%, p<0.0001 | Pre-infection 25-hydroxyvitamin D3 levels and association with severity of CO…
Details Retrospective 253 hospitalized patients in Israel showing higher mortality and higher risk of severe cases with vitamin D deficiency. Vitamin D levels we…

Jun 6 | Levels | *Diaz-Curiel*, Journal of Steroi… | ICU, ↓73.2%, p=0.02 | The relationship between 25(OH) vitamin D levels and COVID-19 onset and dis…
Details Retrospective 1,549 patients in Spain showing that the frequency of vitamin D deficiency was higher in admitted patients compared to the overall Spani…

Jun 4 | Levels | *Kotur* et al., Frontiers in Nutrition, doi:10.3389/fnut.2021.689419 (P… | Association of Vitamin D, Zinc and Selenium Related Genetic Variants With CO…
Details Analysis of variants in genes significant for the status of vitamin D in 120 Serbian COVID-19 patients, showing that vitamin D related genetic variants D…

Jun 2 | PrEP | *Fasano* et al., Movement Dis… | cases, ↓42.0%, p=0.05 | COVID-19 in Parkinson's Disease Patients Living in Lombardy, Italy
Details Retrospective phone survey of 1,486 Parkinson's disease patients in Italy, showing lower risk of COVID-19 cases with vitamin D supplementation. This p…

Jun 1 | Levels | *Butler-Laporte* et al., PLOS Medicine, doi:10.1371/journal.pmed.100… | Vitamin D and COVID-19 susceptibility and severity in the COVID-19 Host Gene…
Details Mendelian randomization study not finding significant differences in COVID-19 outcomes based on vitamin D level. This study does not compare patie…

May 31 | Levels | *Pimental* et al., Clinical Nutrit… | death, ↓29.4%, p=1.00 | Low vitamin D levels and increased neutrophil in patients admitted at ICU with …
Details Retrospective 25 ICU patients in Brazil, showing vitamin D deficiency associated with higher neutrophil-lymphocyte ratio. There appears to be a typo in …

May 29 | Levels | *Sooriyaarachchi* et al., Clinical Nutrition ESPEN, doi:10.1016/j.clnes… | Impact of vitamin D deficiency on COVID-19
Details Analysis of vitamin D deficiency and COVID-19 cases and deaths in 47 countries, showing vitamin D deficiency significantly associated with mortality.

May 28 | Early | *Sánchez-Zuno*, J. Clinical Me… | severe case, ↓89.4%, p=0.04 | Vitamin D Levels in COVID-19 Outpatients from Western Mexico: Clinical Correl…
Details Very small 42 PCR+ outpatient RCT in Mexico, 22 treated with vitamin D. Most patients had insufficient vitamin D levels, there were more symptoms in t…

May 26 | In Sili… | *Al-Mazaideh* et al., Journal of Pharmaceutical Research Internationa… | Vitamin D is a New Promising Inhibitor to the Main Protease (Mpro) of COVID-…
Details *In Silico* study showing vitamin D binding with Mpro of SARS-CoV-2. Among the compounds tested, vitamin D had the highest potential interaction in te…

May 25 | Levels | *Papadimitriou* et al., World J. Virology, doi:10.5501/wjv.v10.i3.111] … | Association between population vitamin D status and SARS-CoV-2 related seri…
Details Country analysis showing negative correlations between population vitamin D level and severe cases and death (but not with cases overall). Authors co…

May 22 | Early | *Asimi* et al., Endocrine Abstra… | ventilation, ↓97.4%, p<0.0001 | Selenium, zinc, and vitamin D supplementation affect the clinical course of CO…
Details Retrospective 356 Hashimoto's thyroiditis outpatients, 270 taking vitamin D, zinc, and selenium, showing significantly lower hospitalization with treatm…

May 21 | Late | *Alcala-Diaz* et al., Nutrients, d… | death, ↓80.8%, p=0.02 | Calcifediol Treatment and Hospital Mortality Due to COVID-19: A Cohort Study
Details Retrospective 537 patients in Spain, 79 treated with calcifediol, showing significantly lower mortality with treatment. The treated group had a higher ris…

May 19 | Levels | *AlSafar* et al., Nutrients, doi:1… | death, ↓59.3%, p=0.05 | COVID-19 Disease Severity and Death in Relation to Vitamin D Status among S…
Details Retrospective 464 patients in United Arab Emirates showing low D levels at first hospital visit associated with higher COVID-19 severity and mortality.

May 19 | Levels | *Li* et al., JAMA Network Open… | cases, ↓8.6%, p=0.21 | Assessment of the Association of Vitamin D Level With SARS-CoV-2 Seropositi…
Details Cohort study of 18,148 patients in the USA showing low vitamin D associated with COVID-19 PCR+ status before adjustments but not after. Authors sta…

May 8 | Levels | *Savitri* et al., Annals of the Ro… | symp. case, ↓88.0%, p<0.0001 | Comparison between Vitamin D Level of Asymptomatic Confirmed Covid-19 P…
Details Retrospective 42 PCR+ patients in Indonesia, showing significantly higher risk of symptomatic cases with vitamin D deficiency.

May 3 | PrEP | *Levitus* et al., Journal of the … | severe case, ↓30.8%, p=0.25 | The Effect of Vitamin D Supplementation on Severe COVID-19 Outcomes in Pat…
Details Retrospective 129 hospitalized patients with vitamin D levels measured within 90 days prior to admission, showing lower, but not statistically significa…

Apr 29 | Early | *Loucera* et al., medRxiv, doi:1… | death, ↓71.9%, p<0.0001 | Real world evidence of calcifediol use and mortality rate of COVID-19 hospitali…
Details Retrospective 16,401 hospitalized patients in Spain showing a significant reduction in mortality associated with the prescription of vitamin D, especially…

Apr 26 | Levels | *Al-Daghri* et al., Journal of Translational Medicine, doi:10.1186/s129… | Vitamin D status of Arab Gulf residents screened for SARS-CoV-2 and its assoc…
Details Case control study with 220 adults showing significantly lower vitamin D levels in PCR+ patients.

Apr 17 | Revie… | *Shah Alam* et al., Internation… | review | The role of vitamin D in reducing SARS-CoV-2 infection: An update
Details Review of vitamin D for COVID-19 noting that infections are likely to be more prevalent in the winter season; clinical trials show vitamin D as a potential …

Apr 6 | PrEP | *Oristrell* et al., Biomedicines, … | death, ↓43.0%, p=0.001 | Association of Calcitriol Supplementation with Reduced COVID-19 Mortality in …
Details Retrospective study of calcitriol supplementation with chronic kidney disease patients in Catalonia showing lower cases, severe cases, and mortality wi…

Apr 5 | Levels | *Ünsal* et al., Journal of Endoc… | death, ↓80.6%, p=0.23 | Retrospective analysis of vitamin D status on ınflammatory markers and cours…
Details Retrospective 56 patients in Turkey showing greater need for oxygen therapy and higher mortality with vitamin D deficiency, and significantly lower risk …

Apr 2 | Levels | *Livingston* et al., Int. J. Clinic… | cases, ↓50.9%, p<0.0001 | Detectable respiratory SARS-CoV-2 RNA is associated with low vitamin D level…
Details Retrospective 104 consecutive patients tested for COVID-19 in a hospital in the UK, showing lower vitamin D and higher social deprivation associated w…

Mar 31 | Levels | *Bayramoğlu* et al., European … | severe case, ↓69.5%, p=0.0008 | The association between vitamin D levels and the clinical severity and inflam…
Details Retrospective 103 pediatric hospitalized COVID-19 patients, showing an association between vitamin D deficiency and clinical severity.

Mar 29 | Meta | *Akbar* et al., Front. Nutr. 8:66… | meta-analysis | Low Serum 25-hydroxyvitamin D (Vitamin D) Level Is Associated With Suscepti…
Details Systematic review and meta analysis showing that low vitamin D levels was associated with COVID-19 cases, severity, and mortality.

Mar 27 | Levels | *Freitas* et al., medRxiv, doi:10… | death, ↓41.2%, p=0.02 | Vitamin D-related polymorphisms and vitamin D levels as risk biomarkers of C…
Details Analysis of 491 hospitalized patients in Portugal showing that polymorphisms in the vitamin D binding protein encoded by the GC gene are related to C…

Mar 26 | Meta | *Petrelli* et al., The Journal of … | meta-analysis | Therapeutic and prognostic role of vitamin D for COVID-19 infection: A system…
Details Meta analysis showing vitamin D deficiency associated with higher risk of COVID-19, worse severity, and higher mortality. Supplementation with vitami…

Mar 22 | Revie… | *Kohlmeier* et al., BMJ Nutriti… | review | When Mendelian randomisation fails
Details Analysis of why Mendelian randomization may fail in vitamin D studies. Authors suggest that it may come down to the use of 25-OHD concentration in …

Mar 19 | Levels | *Meltzer* et al., JAMA Netw Op… | cases, ↓34.6%, p=0.11 | Association of Vitamin D Levels, Race/Ethnicity, and Clinical Characteristics Wi…
Details Retrospective 4,638 individuals with vitamin D levels within 1 year before COVID-19 testing, showing higher risk of COVID-19 PCR+ for vitamin D deficie…

Mar 14 | Levels | *Vanegas-Cedillo*, medRxiv, d… | death, ↓52.6%, p=0.006 | Serum Vitamin D levels are associated with increased COVID-19 severity mark…
Details Retrospective 551 moderate to severe COVID-19 patients in Mexico showing vitamin D ≤12ng/mL independently associated with COVID-19 mortality. N…

Mar 13 | Levels | *Jayawardena* et al., Diabetes & Metabolic Syndrome: Clinical Resear… | Impact of the vitamin D deficiency on COVID-19 infection and mortality in Asia…
Details Analysis of Asian countries finding that prevalence of vitamin D deficiency and lower vitamin D levels were associated with COVID-19 infection and mor…

Mar 12 | Levels | *Ahmad* et al., medRxiv, doi:1… | death, ↓53.6%, p=0.03 | Mean Vitamin D levels in 19 European Countries & COVID-19 Mortality over 10 …
Details Retrospective 19 European countries showing countries with mean vitamin D levels > 50nmol/L have a 2.2 times lower risk of mortality (*p* = 0.032) com…

Mar 8 | Levels | *Charoenngam* et al., Endocri… | death, ↓34.1%, p=0.19 | Association of vitamin D status with hospital morbidity and mortality in adult …
Details Retrospective 287 hospitalized patients in the USA showing significantly lower mortality with vitamin D sufficiency in elderly patients and patients with…

Mar 7 | Late | *Notz* et al., Clinical Nutrition, doi:10.1016/j.clnu.2021.03.001 (Peer … | Vitamin D deficiency in critically ill COVID-19 ARDS patients
Details Retrospective 26 ICU patients showing that the majority of patients had vitamin D deficiency. There was no statistically significant association of 25-hy…

Mar 5 | Levels | *Kralj* et al., Critical Case Reports, doi:10.1002/ccr3.4010 (Peer Revie… | Vitamin D and COVID-19 in an immunocompromised patient with multiple co…
Details Case report of a high-risk immunocompromised patient with multiple comorbidities that had a mild case of COVID-19. The patient had UVB phototherа…

Mar 5 | Levels | *Mazziotti* et al., J Endocrinol.… | progression, ↓37.0%, p=0.006 | Vitamin D deficiency, secondary hyperparathyroidism and respiratory insufficie…
Details Retrospective 348 hospitalized patients in Italy showing vitamin D deficiency associated with acute hypoxemic respiratory failure.

Mar 4 | Levels | *Lohia* et al., American Journa… | death, ↓14.7%, p=0.56 | Exploring the link between vitamin D and clinical outcomes in COVID-19
Details

Mar 3 | Levels | *Ricci* et al., Respiratory Resea… | death, ↓87.6%, p=0.07 | Circulating Vitamin D levels status and clinical prognostic indices in COVID-19 …
Details Retrospective 52 hospitalized COVID-19 patients showing that vitamin D deficiency is associated with compromised inflammatory responses and high…

Feb 24 | PrEP | *Sulli* et al., Nutrients, doi:10.3… | cases, ↓50.4%, p=0.0002 | Vitamin D and Lung Outcomes in Elderly COVID-19 Patients
Details Retrospective 65 elderly COVID-19 patients and 65 matched controls, showing lower vitamin D levels associated with more severe lung involvement, lo…

Feb 23 | Late | *Lakkireddy* et al., Scientific R… | death, ↓60.9%, p=0.27 | Impact of daily high dose oral vitamin D therapy on the inflammatory markers …
Details RCT 44 treatment and 43 control patients with vitamin D levels <30ng/ml, showing significant reduction in inflammatory markers with treatment of 60,…

Feb 19 | Levels | *Gavioli* et al., Journal of the … | death, ↑4.7%, p=0.83 | An Evaluation of Serum 25-Hydroxy Vitamin D Levels in Patients with COVID-1…
Details Retrospective 437 mostly serious condition (85% hospitalized) patients in New York, showing vitamin D deficiency associated with increased likelihood …

Feb 18 | Levels | *Infante* et al., Journal of the … | death, ↓54.8%, p=0.05 | Low Vitamin D Status at Admission as a Risk Factor for Poor Survival in Hospit…
Details Retrospective 137 hospitalized patients in Italy. All patients had low vitamin D levels, and lower levels were associated with higher mortality. In multivar…

Feb 12 | Levels | *Susianti* et al., Journal of Me… | death, ↓91.5%, p=0.32 | Low Levels of Vitamin D were Associated with Coagulopathy among Hospitali…
Details Retrospective 50 hospitalized PCR+ patients in Indonesia showing ICU admission, mortality, and ISTH DIC (Disseminated Intravascular Coagulation) sc…

Feb 3 | Levels | *Yadav* et al., Indian Journal of Clinical Biochemistry, doi:10.1007/s1… | Association of Vitamin D Status with COVID-19 Infection and Mortality in the A…
Details Analysis of vitamin D levels and COVID-19 in 37 Asia Pacific countries, finding a significant association with the number of cases/million (r = −0.394, *p* …

Feb 2 | Levels | *Söbü* et al., The Journal of Current Pediatrics, doi:10.4274/jcp.2021.… | Vitamin D Levels of COVID-19 Positive Sypmtomatic Pediatric Cases
Details Retrospective 30 hospitalized pediatric COVID-19 patients and 82 healthy controls, showing significantly lower vitamin D levels in COVID-19 patients.

Feb 1 | Levels | *Patchen* et al., BMJ Nutrition,… | severe case, ↓2.0%, p=0.11 | Genetically predicted serum vitamin D and COVID-19: a Mendelian randomizati…
Details UK Biobank Mendelian randomization study not finding significant differences in COVID-19 risk. The number of people predicted to have vitamin D defi…

Jan 31 | Levels | *Nadiger* et al., Critical Care Medicine, doi:10.1097/01.ccm.0000726… | Vitamin D Levels in Children With COVID-19 Admitted to the PICU
Details Retrospective 14 pediatric COVID-19 ICU patients showing that the majority were vitamin D deficient.

Jan 29 | Levels | *Demir* et al., Journal of Medic… | severe case, ↓89.3%, p<0.001 | Vitamin D deficiency is associated with COVID-19 positivity and the severity of…
Details Retrospective cohort study of 487 patients finding that lower vitamin D levels is associated with more severe cases as measured by affected lung segm…

Jan 29 | PrEP | *Ma* et al., The American Jour… | cases, ↓30.0%, p=0.03 | Habitual use of vitamin D supplements and risk of coronavirus disease 2019 (…
Details Retrospective 8,297 adults from the UK Biobank showing the habitual use of vitamin D supplements significantly associated with lower risk of COVID-1…

Jan 29 | Levels | *Rafailia* et al., medRxiv, doi:10.1101/2021.01.28.21250673 (Preprint) | Is vitamin D deficiency associated with the COVID-19 epidemic in Europe
Details Analysis of vitamin D deficiency and COVID-19 cases and mortality in European countries showing significant correlations with infections (r=0.82, *p*<0.…

Jan 28 | Revie… | *Brenner*, H., Nutrients, doi:10.… | review | Vitamin D Supplementation to Prevent COVID-19 Infections and Deaths—Accu…
Details Summary of epidemiological and intervention studies for vitamin D supplementation. Author concludes that despite limitations, evidence strongly supp…

Jan 25 | Levels | *Barassi* et al., Panminerva M… | death, ↓64.9%, p=0.44 | Vitamin D in severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) p…
Details Retrospective 118 consecutive hospitalized PCR+ patients in Italy showing higher ventilation and mortality with vitamin D deficiency.

Jan 22 | Late | *Nogués* et al., The Journal of … | death, ↓79.0%, p=0.001 | Calcifediol Treatment and COVID-19-Related Outcomes
Details Quasi-randomized trial with 930 hospitalized patients, 447 treated with calcifediol, showing significantly lower ICU admission and death with treatment…

Jan 21 | Levels | *Walrand*, S., Nature, doi:10.1038/s41598-021-81419-w (Peer Revie… | Autumn COVID-19 surge dates in Europe correlated to latitudes, not to tempera…
Details Analysis of the increase in COVID-19 cases in European countries, showing no correlation with temperature, but a significant correlation with country la…

Jan 19 | Levels | *Orchard* et al., Clin Chem Lab… | ICU, ↓58.8%, p=0.001 | Vitamin-D levels and intensive care unit outcomes of a cohort of critically ill C…
Details Retrospective 165 hospitalized patients with known vitamin D levels, showing an associated between vitamin D deficiency and ICU admission. There w…

Jan 18 | PrEP | *Vasheghani* et al., Research … | death, ↓30.4%, p=0.45 | The Association of 25 (OH) Vitamin D Levels and Severity and Outcome of CO…
Details Retrospective 508 hospitalized COVID-19 patients in Iran showing lower mortality with vitamin D supplementation, and an association between low vit…

Jan 14 | Late | *Giannini* et al., Nutrients, doi:… | death/ICU, ↓36.6%, p=0.13 | Effectiveness of In-Hospital Cholecalciferol Use on Clinical Outcomes in Como…
Details Retrospective 91 hospitalized patients, 36 treated with high-dose cholecalciferol, showing lower combined death/ICU admission with treatment. Author…

Jan 12 | Levels | *Bennouar* et al., Journal of th… | death, ↓85.5%, p=0.002 | Vitamin D Deficiency and Low Serum Calcium as Predictors of Poor Prognosis …
Details Prospective study of 120 severe cases of COVID-19 in Algeria finding low vitamin D and low calcium both associated with increased mortality.

Jan 11 | Levels | *Li* et al., Aging and Disease, d… | severe case, ↓36.2%, p<0.0001 | Metabolic Healthy Obesity, Vitamin D Status, and Risk of COVID-19
Details UK Biobank retrospective 353,299 patients showing that vitamin D insufficiency and deficiency are associated with increased COVID-19 risk. This study…

Jan 9 | Levels | *Angelidi* et al., Mayo Clinic Pr… | death, ↓88.0%, p=0.01 | Vitamin D Status is Associated With In-hospital Mortality and Mechanical Vent…
Details Retrospective 144 patients in the USA showing significantly lower mortality for vitamin D levels >=30ng/mL.

Jan 7 | Levels | *Pal* et al., Frontiers in Medicine, doi:10.3389/fmed.2020.590805 (Pe… | High Prevalence of Hypocalcemia in Non-severe COVID-19 Patients: A Retrosp…
Details Retrospective 72 non-severe COVID-19 patients in India, showing very high levels of vitamin D deficiency (70 of 72 patients).

Jan 7 | Levels | *Amin* et al., BMJ Nutrition, Pr… | progression, ↑32.3%, p=0.20 | No evidence that vitamin D is able to prevent or affect the severity of COVID-19…
Details Analysis of vitamin D levels and COVID-19 cases and severity based on genetic predisposition to higher vitamin D levels or lower vitamin D deficiency, fi…

Jan 5 | PrEP | *Nikniaz* et al., medRxiv, doi:1… | death, ↓67.5%, p=0.008 | The impact of vitamin D supplementation on mortality rate and clinical outco…
Details Meta analysis of 4 supplementation studies, finding that vitamin D supplementation "seems to decrease the mortality rate, the severity of the disease, a…

Dec 31 2020 | Levels | *Karonova* et al., Infectology, … | death, ↓79.4%, p=0.07 | Serum 25(oH)D level in patients with CoVID-19
Details Retrospective 80 COVID-19 patients showing low vitamin D levels associated with severity and mortality.

Dec 30 2020 | Levels | *Szeto* et al., Endocrine Resea… | death, ↑5.6%, p=1.00 | Vitamin D Status and COVID-19 Clinical Outcomes in Hospitalized Patients
Details Retrospective 93 hospitalized patients with vitamin D levels 1-365 days before admission, not showing significant differences with vitamin D deficiency…

Dec 30 2020 | Revie… | *McCullough* et al., Reviews i… | review | Multifaceted highly targeted sequential multidrug treatment of early ambulator…
Details Review urging early treatment of COVID-19 with sequential multidrug treatment that has been shown to be safe and effective. Proposed treatment inclu…

Dec 28 2020 | Late | *Jevalikar* et al., Scientific Rep… | death, ↓82.0%, p=0.12 | Lack of association of baseline 25-hydroxyvitamin D levels with disease severi…
Details Prospective study of 410 hospitalized patients in India showing lower mortality and ICU admission with cholecalciferol treatment, although not statistic…

Dec 26 2020 | Late | *Sistanizad* et al., European J… | death, ↓63.5%, p=0.004 | High dose vitamin D improves total serum antioxidant capacity and ICU outco…
Details RCT of 30 ventilated ICU patients showing lower mortality with vitamin D treatment, RR 0.36, *p* = 0.004. Authors do not indicate why the patients were h…

Dec 22 2020 | PrEP | *Cangiano* et al., Aging, doi:10… | death, ↓70.0%, p=0.04 | Mortality in an Italian nursing home during COVID-19 pandemic: correlation wi…
Details 70% lower mortality with vitamin D supplementation. Analysis of 98 PCR+ nursing home residents in Italy, mean age 90, vitamin D supplementation RR …

Dec 12 2020 | Levels | *Abdollahi* et al., Journal of M… | cases, ↓53.9%, p=0.001 | The Association Between the Level of Serum 25(OH) Vitamin D, Obesity, and un…
Details Case control study with 201 patients and 201 matched controls in Iran showing vitamin D deficiency associated with COVID-19.

Dec 11 2020 | Late | *Ling* et al., Nutrients, doi:10.3… | death, ↓79.8%, p<0.001 | High-Dose Cholecalciferol Booster Therapy is Associated with a Reduced Risk …
Details 80% lower mortality with cholecalciferol booster therapy. Retrospective 986 hospitalized patients in the UK finding that cholecalciferol booster therapy, r…

Dec 10 2020 | News | *VitaminDForAll* (News) | news | Over 100 Scientists, Doctors, & Leading Authorities Call For Increased Vitamin …
Details Over 100 scientists and doctors call for efforts to increase vitamin D levels. Recommendations include reaching 75 nmol/L serum levels, 2000-4000IU d…

Dec 9 2020 | Levels | *Vassiliou* et al., Hellenic Journal of Cardiology, doi:10.1016/j.hjc.20… | Vitamin D deficiency correlates with a reduced number of natural killer cells in i…
Details Observational study of 29 ICU patients and 10 non-ICU patients showing vitamin D levels positively correlated with cytotoxic T cells, natural killer (NK) …

Dec 9 2020 | Levels | *Vassiliou* et al., Nutrients, doi… | death, ↓90.9%, p=0.04 | Low 25-Hydroxyvitamin D Levels on Admission to the Intensive Care Unit May …
Details Small prospective study of 30 ICU patients, showing higher mortality risk for low vitamin D levels. When divided into two groups at the median level, the…

Dec 5 2020 | Levels | *Alguwaihes* et al., Cardiovasc… | death, ↓85.7%, p=0.007 | Diabetes and Covid-19 among hospitalized patients in Saudi Arabia: a single-c…
Details Retrospective 439 diabetic hospitalized patients in Saudi Arabia showing lower mortality with vitamin D >12.5 nmol/L, adjusted hazard ratio aHR 0.14, …

Dec 4 2020 | Levels | *Katz* el al., Nutrition, doi:10.1… | cases, ↓78.4%, p<0.001 | Increased risk for Covid-19 in patients with Vitamin D deficiency
Details Retrospective database analysis showing patients with vitamin D deficiency were 4.6 times more likely to be COVID-19 positive, *p*<0.001.

Nov 30 2020 | PrEP | *Louca* et al., BMJ Nutrition, P… | cases, ↓7.5%, p=0.0007 | Modest effects of dietary supplements during the COVID-19 pandemic: insight…
Details Survey analysis of dietary supplements showing vitamin D usage associated with lower incidence of COVID-19. These results are for PCR+ cases only, t…

Nov 25 2020 | Levels | *De Smet* et al., American Jou… | death, ↓70.1%, p=0.02 | Serum 25(OH)D Level on Hospital Admission Associated With COVID-19 Stage …
Details Retrospective 186 hospitalized patients in Belgium showing that 59% of patients were vitamin D deficient, and that non-vitamin D deficient patients ha…

Nov 19 2020 | Levels | *Jain* et al., Nature, doi:10.103… | ICU, ↓95.4%, p<0.0001 | Analysis of vitamin D level among asymptomatic and critically ill COVID-19 pa…
Details Prospective study of 91 asymptomatic and 63 ICU patients showing significantly higher vitamin D deficiency in the ICU patients (97% vs. 33%).

Nov 17 2020 | Late | *Murai* et al., JAMA, doi:10.10… | death, ↑48.7%, p=0.43 | Effect of a Single High Dose of Vitamin D3 on Hospital Length of Stay in Patien…
Details Very late stage (mean 10 days from symptom onset, 90% on oxygen at baseline) vitamin D supplementation RCT not showing significant differences. E…

Nov 13 2020 | Levels | *Luo* et al., The Journal of Nut… | progression, ↓63.0%, p=0.01 | Vitamin D Deficiency Is Inversely Associated with COVID-19 Incidence and Dise…
Details Retrospective 335 patients in China compared to 560 matched controls showing significanlty lower risk of severe COVID-19 with vitamin D sufficiency (…

Nov 12 2020 | Meta | *Jungreis* et al., medRxiv, doi:10.1101/2020.11.08.20222638 (Prepri… | Mathematical analysis of Córdoba calcifediol trial suggests strong role for Vita…
Details Analysis of Castillo et al. confirming efficacy of calcifediol treatment. Authors find that issues related to imperfect blinding and comorbidities can not ex…

Nov 12 2020 | Late | *Rastogi* et al., Postgraduate … | viral+, ↓52.6%, p=0.02 | Short term, high-dose vitamin D supplementation for COVID-19 disease: a rand…
Details 53% reduction in PCR+ with high-dose cholecalciferol supplementation. RCT with 16 treatment patients and 24 control patients. Relative risk of PCR+ a…

Nov 11 2020 | PrEP | *Cereda* et al., Nutrition, doi:1… | death, ↑73.0%, p=0.14 | Vitamin D supplementation and outcomes in coronavirus disease 2019 (COVI…
Details Retrospective 105 Parkinson's disease patients, 92 caregivers, and 127 hospital inpatients, showing higher, but not statistically significant mortality an…

Nov 9 2020 | Levels | *Walk* et al., medRxiv, doi:10.1… | int./death, ↑0.4%, p=1.00 | Vitamin D - contrary to vitamin K - does not associate with clinical outcome in …
Details Small retrospective study of 135 patients not finding a significant difference in vitamin D status. Patients with good outcomes had a median of 45.0 n…

Nov 2 2020 | PrEP | *Annweiler* et al., Nutrients, do… | death, ↓93.0%, p=0.02 | Vitamin D Supplementation Associated to Better Survival in Hospitalized Frail …
Details Retrospective study finding that regular bolus vitamin D supplementation was associated with less severe COVID-19 and better survival in frail elderly. …

Nov 1 2020 | Levels | *Cereda* et al., Clinical Nutritio… | death, ↑120.0%, p=0.04 | Vitamin D 25OH deficiency in COVID-19 patients admitted to a tertiary referral …
Details Prospective cohort study of 129 adult hospitalized COVID-19 patients finding patients with vitamin D levels >20ng/mL had increased mortality after adj…

Oct 31 2020 | Late | *Ohaegbulam* et al., American Journal of Therapeutics, doi:10.1097/… | Vitamin D Supplementation in COVID-19 Patients: A Clinical Case Series
Details Small case study of 4 vitamin D deficient patients with 2 patients treated with cholecalciferol 1000 IU daily and two patients treated with ergocalciferol …

Oct 31 2020 | Revie… | *Mercola* et al., Nutrients 202… | review | Evidence Regarding Vitamin D and Risk of COVID-19 and Its Severity
Details Review of vitamin D and COVID-19 concluding that the evidence seems strong enough that people and physicians can use or recommend vitamin D su…

Oct 30 2020 | Levels | *Abrishami* et al., European J… | death, ↓75.9%, p=0.04 | Possible association of vitamin D status with lung involvement and outcome i…
Details Retrospective 73 hospitalized patients showing the probability of death in patients with vitamin D deficiency (< 25ng/mL) was 34.6% compared with 6.…

Oct 27 2020 | Levels | *Hernández* et al., The Journal… | death/ICU, ↓83.0%, p<0.0001 | Vitamin D Status in Hospitalized Patients with SARS-CoV-2 Infection
Details Retrospective 216 COVID-19 patients and 197 population controls, showing vitamin D deficiency in 82.2% of COVID-19 cases and 47.2% of population-…

Oct 21 2020 | Revie… | *Basha* et al., Clinical Epidemi… | review | Is the shielding effect of cholecalciferol in SARS CoV-2 infection dependable? A…
Details Review of vitamin D for COVID-19, concluding that the available evidence is very suggestive of protective and preventive effect of vitamin D. Authors not…

Oct 21 2020 | Levels | *Macaya* et al., Nutr. Hosp., do… | severe case, ↓55.0%, p=0.07 | Interaction between age and vitamin D deficiency in severe COVID-19 infection
Details Retrospective 80 hospitalized patients in Spain showing higher risk of severe COVID-19 with vitamin D deficiency.

Oct 20 2020 | PrEP | *Blanch-Rubió* et al., Aging, d… | cases, ↓8.0%, p=0.68 | Influence of anti-osteoporosis treatments on the incidence of COVID-19 in pati…
Details Retrospective 2,102 rheumatology patients in Spain showing lower, but not statistically significant, cases with vitamin D supplementation. Details of vit…

Oct 13 2020 | Early,… | *Annweiler* et al., The Journal … | death, ↓89.0%, p=0.002 | Vitamin D and survival in COVID-19 patients: A quasi-experimental study
Details Vitamin D3 supplementation during or just before COVID-19 was associated with 68% lower mortality and less severe COVID-19 in frail elderly. Retrospe…

Oct 13 2020 | Levels | *Ye* et al., Journal of the Ameri… | hosp., ↓93.4%, p=0.03 | Does Serum Vitamin D Level Affect COVID-19 Infection and Its Severity? A Case…
Details Case control study in China comparing 62 patients with 80 healthy controls showing vitamin D deficiency is a risk factor for COVID-19, especially for se…

Oct 6 2020 | Levels | *Faniyi* et al., medRxiv, doi:10.… | seropositive, ↓28.8%, p=0.003 | Vitamin D status and seroconversion for COVID-19 in UK healthcare workers w…
Details Analysis of vitamin D status and anti-SARS-Cov-2 antibodies in UK healthcare workers finding that Vitamin D deficiency is a risk factor for COVID-19 ser…

Oct 5 2020 | Levels | *Yılmaz* et al., Pediatric Pulmo… | severe case, ↓73.4%, p=1.00 | Is vitamin D deficiency a risk factor for COVID-19 in children?
Details Retrospective 40 hospitalized pediatric COVID-19 patients and 45 healthy controls showing significantly lower vitamin D levels for COVID-19 patients (1…

Oct 5 2020 | Levels | *Karahan* et al., J. Nutr. Health… | death, ↓82.5%, p<0.0001 | Impact of Serum 25(OH) Vitamin D Level on Mortality in Patients with COVID-1…
Details Retrospective 149 COVID-19 patients, 69.1% with vitamin D deficiency, showing lower vitamin D levels associated with higher mortality.

Sep 30 2020 | Levels | *Kerget* et al., Tuberk Toraks, doi:10.5578/tt.70027 (Peer Reviewed) | Evaluation of the relationship of serum vitamin D levels in COVID-19 patients …
Details Prospective study of 88 hospitalized PCR+ COVID-19 patients and 20 asymptomatic PCR- medical personnel, showing lower vitamin D levels correlated…

Sep 25 2020 | Levels | *Maghbooli* et al., PLOS One, … | death, ↓51.7%, p=0.08 | Vitamin D sufficiency, a serum 25-hydroxyvitamin D at least 30 ng/mL reduced…
Details Retrospective 235 hospitalized patients showing a significant association between vitamin D sufficiency and reduction in clinical severity. For patients …

Sep 17 2020 | Levels | *Kaufman* et al., PLOS One, do… | cases, ↓53.0%, p<0.001 | SARS-CoV-2 positivity rates associated with circulating 25-hydroxyvitamin D le…
Details Analysis of 191,779 patients in the US finding COVID-19 positivity strongly and inversely associated with circulating 25(OH)D levels. The relationship p…

Sep 10 2020 | Levels | *Radujkovic* et al., Nutrients 2… | death, ↓93.2%, p=0.001 | Vitamin D Deficiency and Outcome of COVID-19 Patients
Details Observational study 185 patients in Germany shows an association between vitamin D status and severity and mortality. Adjusted hazard ratio of vita…

Sep 10 2020 | Levels | *Israel* et al., medRxiv, doi:http… | cases, ↓21.3%, p<0.001 | The link between vitamin D deficiency and Covid-19 in a large population
Details Large observational population study showing a strong association between vitamin D deficiency and COVID-19.

Sep 3 2020 | Levels | *Meltzer* et al., JAMA network … | cases, ↓43.5%, p=0.02 | Association of Vitamin D Status and Other Clinical Characteristics With COVID-…
Details Retrospective 489 patients showing 44% lower risk for COVID-19 with vitamin D sufficiency, relative risk RR = 0.56, *p* = 0.02.

Aug 29 2020 | Late | *Castillo* et al., Journal of Ster… | death, ↓85.4%, p=0.11 | Effect of calcifediol treatment and best available therapy versus best available …
Details RCT on calcifediol (25-hydroxyvitamin D) treatment for hospitalized COVID-19 patients showing significantly reduced intensive care unit admissions. Al…

Aug 27 2020 | Levels | *Baktash* et al., Postgraduate … | death, ↓28.6%, p=0.50 | Vitamin D status and outcomes for hospitalised older patients with COVID-19
Details Prospective study of 105 hospitalized patients, showing lower vitamin D levels in the COVID-19 positive group (27.0 nmol/L vs 52.0 nmol/L, *p*=0.0008), …

Aug 26 2020 | Revie… | *Xu* et al., Journal of Translati… | review | The importance of vitamin d metabolism as a potential prophylactic, immunor…
Details Review of vitamin D for the prevention and treatment of COVID-19, focusing on preventing SARS-CoV-2 infection, acting as an immunosuppressant inhi…

Aug 26 2020 | Early | *Afshar* et al., Journal of Contemporary Medical Sciences, 10.22317/… | Suggested role of Vitamin D supplementation in COVID-19 severity
Details Brief report noting that there was a dramatic and complete resolution of ICU admissions after adding routine vitamin D supplementation to standard of …

Aug 26 2020 | Levels | *Hastie* et al., Diabetes and M… | death, ↓17.4%, p=0.31 | Vitamin D concentrations and COVID-19 infection in UK Biobank
Details Database analysis of 341,484 patients in the UK with 656 hospitalized confirmed COVID-19 patients and 203 deaths, not showing a statistically signifi…

Aug 15 2020 | Early | *Espitia-Hernandez* et al., Bio… | viral+, ↓97.2%, p<0.0001 | Effects of Ivermectin-azithromycin-cholecalciferol combined therapy on COVID…
Details Small study with 28 patients treated with ivermectin + AZ + cholecalciferol and 7 control patients. All treated patients were PCR- at day 10 while all cont…

Aug 11 2020 | Levels | *Im* et al., Int. J. Infect. Dis., do… | cases, ↓73.1%, p=0.003 | Nutritional status of patients with COVID-19
Details Nutrient study of 50 hospitalized COVID-19 patients in South Korea showing that 76% of patients were vitamin D deficient. Comparison with 150 match…

Aug 9 2020 | Levels | *Carpagnano* et al., J. Endocri… | death, ↓70.6%, p=0.05 | Vitamin D deficiency as a predictor of poor prognosis in patients with acute res…
Details Retrospective study 42 patients with acute respiratory failure, 81% with low vitamin D levels. After 10 days, patients with severe vitamin D deficiency ha…

Jul 23 2020 | Levels | *Merzon* et al., The FEBS Jour… | hosp., ↓46.4%, p=0.06 | Low plasma 25(OH) vitamin D level is associated with increased risk of COVID-…
Details Analysis of 7,807 patients finding that low vitamin D levels are correlated with increased risk of cases and hospitalization. Adjusted odds ratio OR for s…

Jul 23 2020 | Levels | *Lansiaux* et al., Spat. Spatiotemporal Epidemiol, doi:10.1016/j.sste.… | Covid-19 and vit-d: Disease mortality negatively correlates with sunlight expos…
Details Analysis of COVID-19 mortality rate and sunlight exposure finding a correlation that suggests a protective effect of sunlight exposure. In continental me…

Jul 20 2020 | Late | *Krishnan* et al., J Clin Anesth… | death, ↓19.0%, p=0.42 | Clinical comorbidities, characteristics, and outcomes of mechanically ventilate…
Details Retrospective 152 mechanically ventilated patients in the USA showing unadjusted lower mortality with vitamin C, vitamin D, HCQ, and zinc treatment, …

Jul 17 2020 | PrEP | *Jolliffe* et al., medRxiv, doi:10… | meta-analysis | Vitamin D supplementation to prevent acute respiratory infections: systematic …
Details Meta analysis of 40 RCTs showing that vitamin D supplementation is safe and reduced risk of acute respiratory infections, odds ratio OR 0.89 [0.81-0.9…

Jun 30 2020 | Levels | *Hamza* et al., Pakistan Journal of Medical & Health Sciences (Peer … | Role of Vitamin D in Pathogenesis and Severity of Coronavirus Disease 2019 (…
Details Prospective study of 168 patients in Pakistan reporting an association between vitamin D deficiency and symptomatic cases. Details of the association…

Jun 30 2020 | Levels | *Faul* et al., Irish Medical Jour… | ventilation, ↓69.0%, p=0.03 | Vitamin D Deficiency and ARDS after SARS-CoV-2 Infection
Details Analysis of 33 hospitalized COVID-19 patients with respiratory failure requiring FiO2 greater than 0.4. Intubation hazard ratio for vitamin D sufficiency H…

Jun 30 2020 | Levels | *Panagiotou* et al., medRxiv, d… | ICU, ↓52.0%, p=0.02 | Low serum 25-hydroxyvitamin D (25[OH]D) levels in patients hospitalised with …
Details Retrospective analysis 134 hospitalized patients. 19% of ICU patients had 25(OH)D levels > 50 nmol/L vs. 39.1% of non-ICU patients, *p*=0.02

Jun 27 2020 | Levels | *Mendy* et al., medRxiv, doi:10… | death, ↓7.0%, p=0.89 | Factors Associated with Hospitalization and Disease Severity in a Racially and…
Details Retrospective 689 patients showing vitamin D deficiency associated with hospitalization and disease severity.

Jun 22 2020 | In Vit… | *Mok* et al., bioRxiv, doi:10.11… | *in vitro* | Calcitriol, the active form of vitamin D, is a promising candidate for COVID-19 p…
Details *In Vitro* study showing that the active form of Vitamin D, calcitriol, exhibits significant potent activity against SARS-CoV-2.

Jun 19 2020 | Levels | *Raisi-Estabragh* et al., J. Public Health, doi:10.1093/pubmed/fdaa0… | Greater risk of severe COVID-19 in Black, Asian and Minority Ethnic population…
Details UK Biobank retrospective not finding a significant association between vitamin D levels and the risk of PCR+ after adjustment. Since adjustment factor…

Jun 14 2020 | Levels | *Rhodes* et al., BMJ Nutr. Prev. Health, doi:10.1136/bmjnph-2020-00… | COVID-19 mortality increases with northerly latitude after adjustment for age s…
Details Analysis of COVID-19 mortality and latitude as of May 18, 2020, showing that latitude was significantly associated with mortality (*p*=0.031), with an est…

Jun 10 2020 | Late | *Tan* et al., Nutrition, doi:10.10… | oxygen, ↓80.5%, p=0.04 | Cohort study to evaluate the effect of combination Vitamin D, Magnesium and …
Details Observational study of 43 patients >= 50 years old, with 17 patients receiving vitamin D, magnesium, and vitamin B12 (DMB); and 26 control patients, s…

May 9 2020 | Levels | *D'avolio* et al., Nutrients, 12:5, 1–7, doi:10.3390/nu12051359 (Peer … | 25-hydroxyvitamin D concentrations are lower in patients with positive PCR for…
Details Retrospective 107 patients in Switzerland showing lower vitamin D levels (11.1 ng/mL) in PCR positive patients compared with negative patients (24.6 …

Apr 28 2020 | Levels | *Marik* et al., Med Drug Discov., doi:10.1016/j.medidd.2020.100041 (… | Does vitamin D status impact mortality from SARS-CoV-2 infection?
Details Analysis of case fatality rates showing that the CFR was significantly greater for Northern states (>40° latitude) compared to Southern States (6.0% vs. …

Apr 28 2020 | Levels | *Lau* et al., medRxiv, doi:10.11… | ICU, ↓45.0%, p=0.29 | Vitamin D Insufficiency is Prevalent in Severe COVID-19
Details Analysis of 20 hospitalized COVID-19 patients, 13 requiring ICU admission. 84.6% of the ICU patients had low vitamin D levels versus 57.1% of the non-…

Apr 2 2020 | Revie… | *Grant* et al., Nutrients, 12:4, 9… | review | Evidence that Vitamin D Supplementation Could Reduce Risk of Influenza and …
Details Review of the evidence that vitamin D supplementation could reduce COVID-19 risk.

2019 | Revie… | *McCullough* et al., The Journ… | review | Daily oral dosing of vitamin D3 using 5000 TO 50,000 international units a day…
Details Report on the long-term use of vitamin D in hospitalized patients with daily dosing from 5,000 to 50,000IU over 7 years. There were no cases of hyperca…

2017 | N/A | *Martineau* et al., BMJ 2017, … | cases, ↓7.3%, p=0.003 | Vitamin D supplementation to prevent acute respiratory tract infections: syste…
Details Meta analysis of 25 RCTs showing vitamin D supplementation was safe and it protected against acute respiratory tract infection overall. Patients who …

2013 | PrEP | *Quraishi* et al., JAMA Surgery, doi:10.1001/jamasurg.2013.3176 (Pe… | Association Between Preoperative 25-Hydroxyvitamin D Level and Hospital-Ac…
Details Retrospective 770 gastric bypass surgery patients showing a strong relationship between pre-operative vitamin D levels and the risk of hospital acquire…

2013 | N/A | *Bergman* et al., PLoS ONE, 2… | meta-analysis | Vitamin D and Respiratory Tract Infections: A Systematic Review and Meta-An…
Details Meta analysis of 11 placebo-controlled studies of 5660 patients. Vitamin D showed a protective effect against RTI (OR 0.64 [0.49-0.84]). The protective …

2012 | Revie… | *Palacios* et al., J Steroid Bioc… | review | Is vitamin D deficiency a major global public health problem?
Details Review showing vitamin D deficiency is common worldwide in all age groups.

2012 | Relat… | *Mitchell* et al., Endocr. Pract., 2012, 18:6, 914–923, doi:10.4158/EP1… | Prevalence and predictors of vitamin D deficiency in healthy adults
Details Study of 634 healthy volunteers showing 64% had 25(OH)D ≤ 30 ng/mL. Gender, ethnicity, and multivitamin use were significantly associated with 25(O…

2010 | PrEP | *Urashima* et al., Am. J. Clin. Nutr. 2010, 91:5, 1255-60, doi:10.3945/… | Randomized trial of vitamin D supplementation to prevent seasonal influenza …
Details RCT for vitamin D supplementation and seasonal influenza A in schoolchildren, showing 10.8% incidence in children in the vitamin D3 group compared…

2008 | N/A | *Carlberg* et al., The Journal of Steroid Biochemistry and Molecular B… | In vivo response of the human epigenome to vitamin D: A Proof-of-principle stu…
Details Epigenome-wide chromatin accessibility study before and after vitamin D supplementation (calcitriol), showing significant changes at hundreds of site…

2006 | Revie… | *Cannell* et al., Epidemiol Infe… | review | Epidemic influenza and vitamin D
Details Review article on the mechanisms of action and seasonality of vitamin D levels, concluding that varying vitamin D levels may be the reason for the sea…

For search methods, inclusion criteria, effect extraction criteria (more serious outcomes have priority), PRISMA answers, and statistical methods see vdmeta.com. Meta, Theory, Safety, Review, and News items are not included in the study count. There is a total of 153 items. Studies with preprints and journal versions are listed under the earlier preprint date.

Please send us corrections, updates, or comments. *Vaccines and treatments are both extremely valuable and complementary. All practical, effective, and safe means should be used. Elimination of COVID-19 is a race against viral evolution. No treatment, vaccine, or intervention is 100% available and effective for all current and future variants. Denying the efficacy of any method increases the risk of COVID-19 becoming endemic; and increases mortality, morbidity, and collateral damage. We do not provide medical advice. Before taking any medication, consult a qualified physician who can provide personalized advice and details of risks and benefits based on your medical history and situation. Treatment protocols for physicians are available from the FLCCC.*

Feedback

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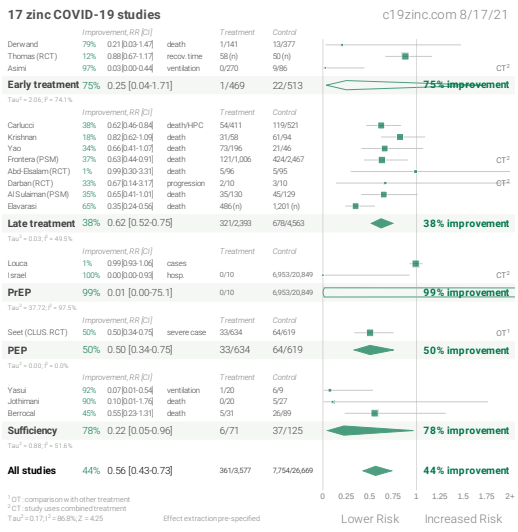

Database of all zinc COVID-19 studies. Submit updates/corrections.

Search: Restrict: **All** Early Late Levels

Aug 12
Late ***Elavarasi*** *et al., medRxiv, doi:...* death, ↓**65.1%**, p<0.0001 Clinical features, demography and predictors of outcomes of SARS-CoV-2 infec...
Details Retrospective 2017 hospitalized patients in India, showing lower mortality with zinc treatment.

Jul 27
PrEP ***Israel*** *et al., Epidemiology an...* hosp., ↓**>99.9%**, p=0.04 Identification of drugs associated with reduced severity of COVID-19: A case-c...
Details Case control study examining medication usage with a healthcare database in Israel, showing lower risk of hospitalization with calcium + zinc supple...

Jul 6
PrEP ***Margolin*** *et al., Journal of Evi...* cases, ↓**94.4%**, p=0.003 20-Week Study of Clinical Outcomes of Over-the-Counter COVID-19 Prophylaxi...
Details Retrospective 113 outpatients, 53 (patient choice) treated with zinc, quercetin, vitamin C/D/E, l-lysine, and Quina, showing lower cases with treatment.

Jun 15
In Vit... ***Panchariya*** *et al., bioRxiv, doi...* *in vitro* Zinc2+ ion inhibits SARS-CoV-2 main protease and viral replication in vitro
Details *In Silico* and *In Vitro* study showing that ionic zinc inhibits SARS-CoV-2 main protease (Mpro) and inhibits viral replication. Zinc acetate inhibited viral r...

Jun 12
Levels ***Verschelden*** *et al., medRxiv, doi:10.1101/2021.06.09.21258271 (Pr...* Plasma zinc status and hyperinflammatory syndrome in hospitalized COVID-1...
Details Prospective study of 139 hospitalized COVID-19 patients, showing 96% had zinc deficiency. Higher zinc levels were associated with a shorter length of ...

Jun 7
Late ***Al Sulaiman*** *et al., Research ...* death, ↓**35.0%**, p=0.05 Evaluation of Zinc Sulfate as an Adjunctive Therapy in COVID-19 Critically Ill P...
Details Retrospective 266 ICU patients showing lower mortality with zinc treatment (very close to statistical significance), and higher odds of acute kidney injury.

May 22
Early ***Asimi*** *et al., Endocrine Abstra...* ventilation, ↓**97.4%**, p<0.0001 Selenium, zinc, and vitamin D supplementation affect the clinical course of CO...
Details Retrospective 356 Hashimoto's thyroiditis outpatients, 270 taking vitamin D, zinc, and selenium, showing significantly lower hospitalization with treatm...

Apr 15
Levels ***Skalny*** *et al., Metabolites, doi:10.3390/metabo11040244 (Peer Revi...* Serum Zinc, Copper, and Other Biometals Are Associated with COVID-19 Severi...
Details Analysis of serum metal levels in 150 COVID-19 patients and 44 controls, finding that COVID-19 severity was associated with lower serum Ca, Fe, Se, Z...

Apr 14
PEP ***Seet*** *et al., International Jour...* severe case, ↓**49.7%**, p=0.03 Positive impact of oral hydroxychloroquine and povidone-iodine throat spray f...
Details Prophylaxis RCT in Singapore with 3,037 low risk patients, showing lower serious cases, lower symptomatic cases, and lower confirmed cases of COVI...

Feb 13
Levels ***Dubourg*** *et al., Journal of Microbiology, Immunology and Infection, ...* Low blood zinc concentrations in patients with poor clinical outcome during S...
Details Retrospective 275 patients showing zinc levels significantly lower in patients with poor outcomes, 840 vs. 970 µg/L, p< 0.0001.

Feb 12
Early ***Thomas*** *et al., JAMA Networ...* recov. time, ↓**11.9%**, p=0.38 Effect of High-Dose Zinc and Ascorbic Acid Supplementation vs Usual Care on ...
Details Small 214 low-risk outpatient RCT showing non-statistically significant faster recovery with zinc and with vitamin C. The zinc dosage appears low, 50m...

Jan 7
Revie... ***Sethuram*** *et al., Reproductiv...* review Potential Role of Zinc in the COVID-19 Disease Process and its Probable Impac...
Details Review of zinc deficiency and supplementation for COVID-19, including potential impacts on reproductive health.

Jan 4
Revie... ***Joachimiak*** *et al., PLOS Negl...* review Zinc against COVID-19? Symptom surveillance and deficiency risk groups
Details Literature review concluding that zinc should be included as part of preventative supplementation for COVID-19, in general for support of immune healt...

Dec 30 2020
Revie... ***McCullough*** *et al., Reviews i...* review Multifaceted highly targeted sequential multidrug treatment of early ambulator...
Details Review urging early treatment of COVID-19 with sequential multidrug treatment that has been shown to be safe and effective. Proposed treatment inclu...

Dec 15 2020
Late ***Darban*** *et al., Journal of Cell...* progression, ↓**33.3%**, p=1.00 Efficacy of High Dose Vitamin C, Melatonin and Zinc in Iranian Patients with A...
Details Small RCT in Iran with 20 ICU patients, 10 treated with high-dose vitamin C, melatonin, and zinc, not showing significant differences. IRCT2015122802...

Nov 30 2020
PrEP ***Louca*** *et al., BMJ Nutrition, P...* cases, ↓**0.9%**, p=0.80 Modest effects of dietary supplements during the COVID-19 pandemic: insight...
Details Survey analysis of dietary supplements showing no significant difference in PCR+ cases with zinc usage. These results are for PCR+ cases only, they d...

Nov 29 2020
Late ***Abd-Elsalam*** *et al., Biological...* death, ↓**1.0%**, p=0.99 Do Zinc Supplements Enhance the Clinical Efficacy of Hydroxychloroquine?: a ...
Details 191 patient RCT in Egypt comparing the addition of zinc to HCQ, not showing a significant difference. Clinical recovery at 28 days was 79.2% in the zin...

Nov 18 2020
In Sili... ***Pormohammad*** *et al., International Journal of Molecular Medicine, ...* Zinc and SARS-CoV-2: A molecular modeling study of Zn interactions with RN...
Details *In Silico* analysis supporting the hypothesis that Zn would bind and regulate the enzymatic activities of 3CLpro and RdRp of SARS-CoV-2 and therefore ...

Oct 26 2020
Late ***Frontera*** *et al., Research Squ...* death, ↓**37.0%**, p=0.01 Treatment with Zinc is Associated with Reduced In-Hospital Mortality Among ...
Details Retrospective 3,473 hospitalized patients showing 37% lower mortality with HCQ+zinc. PSM aHR 0.63, p=0.015 regression aHR 0.76, p = 0.023

Oct 26 2020
Levels ***Berrocal*** *et al., Research Squ...* death, ↓**44.8%**, p=0.23 Zinc and Vitamin A Deficiency Predisposes to the Need for Intubation and ICU ...
Details Retrospective 120 hospitalized patients showing zinc deficiency associated with a higher ICU admission rate (61.8% vs.29%; p = 0.002) and a higher ra...

Oct 26 2020
Early ***Derwand*** *et al., International ...* death, ↓**79.4%**, p=0.12 COVID-19 Outpatients – Early Risk-Stratified Treatment with Zinc Plus Low Do...
Details 79% lower mortality and 82% lower hospitalization with early HCQ+AZ+Z. Retrospective 518 patients (141 treated, 377 control).

Oct 20 2020
PrEP ***Heller*** *et al., Redox Biology, doi:10.1016/j.redox.2020.101764 (Peer ...* Prediction of Survival Odds in COVID-19 by Zinc, Age and Selenoprotein P as C...
Details Analysis of 35 COVID-19 patients showing a significant correlation for serum zinc levels between COVID-19 patients and controls, and between COVID-...

Oct 11 2020
Late ***Vogel-González*** *et al., medRxiv, doi:10.1101/2020.10.07.20208645 ...* Low zinc levels at clinical admission associates with poor outcomes in COVID-...
Details Shows a correlation between serum zinc levels and COVID-19 outcome. Almost all patients received HCQ.

Sep 10 2020
Levels ***Jothimani*** *(Peer Reviewed)* death, ↓**89.7%**, p=0.06 COVID-19: Poor outcomes in patients with zinc deficiency
Details Prospective study of zinc levels in 47 hospitalized COVID-19 patients and 45 healthy controls. COVID-19 patients had significantly lower zinc levels (74....

Sep 7 2020
Levels ***Yasui*** *et al., International Jou...* ventilation, ↓**92.5%**, p=0.001 Analysis of the predictive factors for a critical illness of COVID-19 during treat...
Details Retrospective 62 hospitalized patients, 29 with serum zinc data, showing significantly lower serum zinc levels for severe COVID-19 cases (intubation) c...

Jul 22 2020
Late ***Yao*** *et al., Chest, doi:10.1016...* death, ↓**34.0%**, p=0.09 The Minimal Effect of Zinc on the Survival of Hospitalized Patients With COVID...
Details Retrospective 242 hospitalized patients in the USA showing adjusted hazard ratio for zinc treatment, aHR 0.66 [0.41-1.07]. [1] notes that the study woul...

Jul 20 2020
Late ***Krishnan*** *et al., J Clin Anesth...* death, ↓**17.6%**, p=0.18 Clinical comorbidities, characteristics, and outcomes of mechanically ventilate...
Details Retrospective 152 mechanically ventilated patients in the USA showing unadjusted lower mortality with vitamin C, vitamin D, HCQ, and zinc treatment, ...

Jun 6 2020
Late ***Finzi*** *et al., International Journal of Infectious Diseases, doi:10.1016...* Treatment of SARS-CoV-2 with high dose oral zinc salts: A report on four patie...
Details Case report on 4 patients treated with high dose zinc. All patients experienced significant improvement after one day.

May 8 2020
Late ***Carlucci*** *et al., J. Med. Micro...* death/HPC, ↓**37.7%**, p=0.002 Zinc sulfate in combination with a zinc ionophore may improve outcomes in h...
Details Retrospective 932 patients showing that the addition of zinc to HCQ+AZ reduced mortality / transfer to hospice, ICU admission, and the need for ventila...

2010
In Vit... ***te Velthuis*** *et al., PLOS Patho...* *in vitro* Zn2+ Inhibits Coronavirus and Arterivirus RNA Polymerase Activity In Vitro and...
Details Shows that the combination of Zn2+ and a zinc ionophore (pyrithione) at low concentrations inhibits the replication of SARS-CoV and equine arteritis vi...

Please send us corrections, updates, or comments. *Vaccines and treatments are both extremely valuable and complementary. All practical, effective, and safe means should be used. Elimination of COVID-19 is a race against viral evolution. No treatment, vaccine, or intervention is 100% available and effective for all current and future variants. Denying the efficacy of any method increases the risk of COVID-19 becoming endemic; and increases mortality, morbidity, and collateral damage. We do not provide medical advice. Before taking any medication, consult a qualified physician who can provide personalized advice and details of risks and benefits based on your medical history and situation. Treatment protocols for physicians are available from the FLCCC.*

Feedback

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